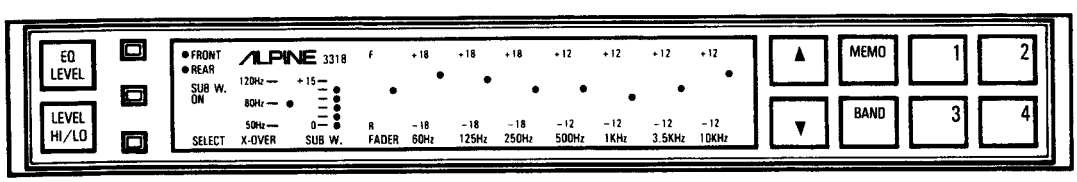
ALPINE SERVICE MANUAL

Pre-Amp
7-Band Electronic Equalizer
with Sub-woofer Output



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Specifications

Power Source	14.4V DC (11 ∿ 16V allowable)
Distortion (0.5Vrms/channel)	0.1%
Input Sensitivity (1 kHz)	0.5Vrms ±1 dB
Equalizer Band	60, 120, 250, 500, 1k, 3.5k, 10 kHz
Equalizer Level	±18 dB ±3 dB (60, 120, 250 Hz) ±12 dB ±3 dB (500, 1000, 3500, 10000 Hz)
Output Impedance	10K ohm
Residual Noise (Input short)	30μV
Frequency Response (−3 dB at 0.5Vrms)	20 to 30000 Hz
Current Consumption (No signal)	1.2A
Input Impedance	10K ohm ±2K ohm
Channel Separation	50 dB
Semi-conductors	28 IC's, 29 Transistors, 21 Diodes, 10 Zener Diodes
Dimensions	180(W) x 165(D) x 25(H) mm
Weight	1 kg

NOTE: Due to continuing product improvement, specifications and design are subject to change without notice.

Parts Locations and Disassembly Instructions

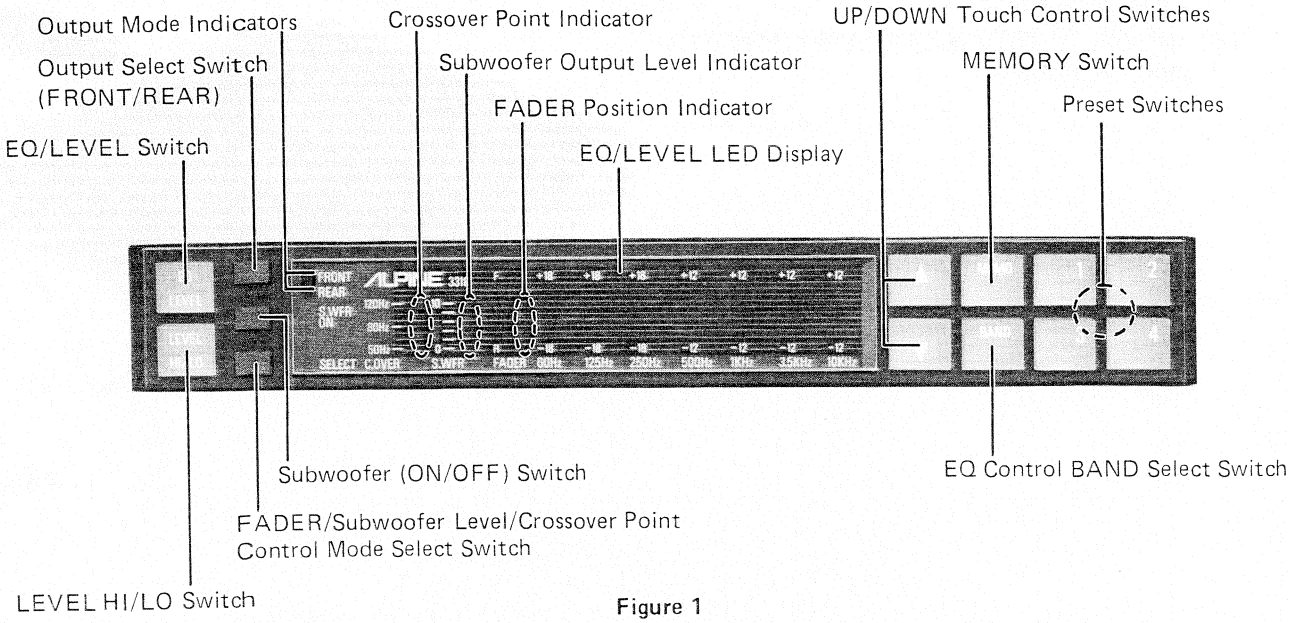


Figure 1

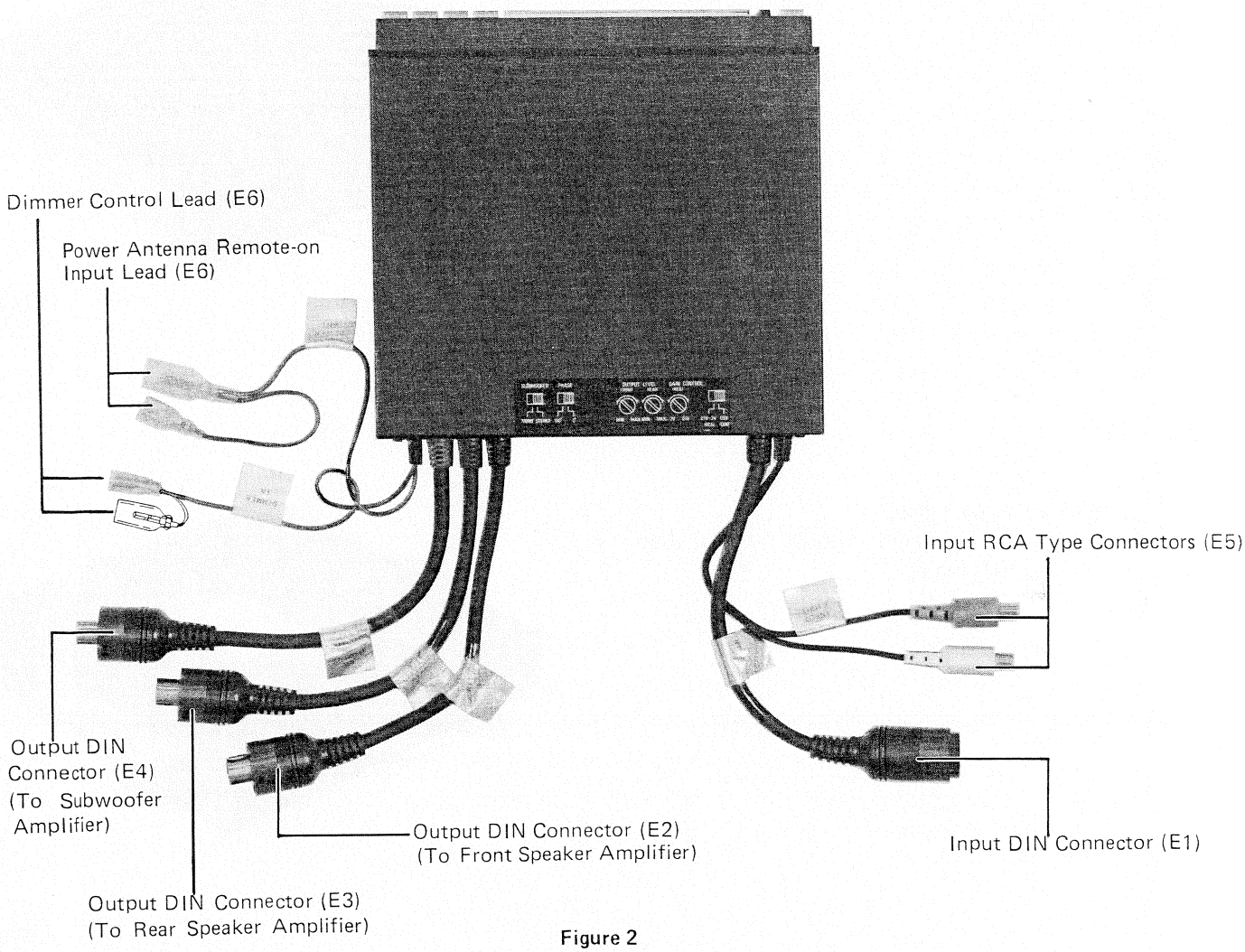


Figure 2

1. Removal of Top Cover
   (1) Remove four screws marked " ○ " as shown in Figures 3 and 4.
   (2) Pull out the top cover in the arrow direction as shown in Figure 3.

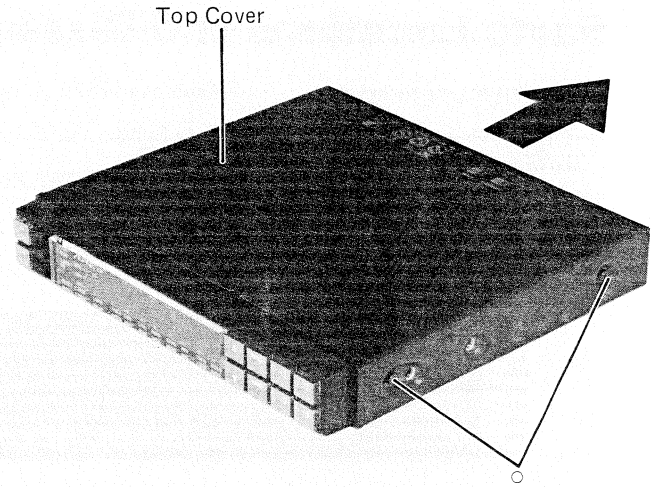


Figure 3

2. Removal of Bottom Cover
   (1) Remove two screws marked " △ " as shown in Figure 5.

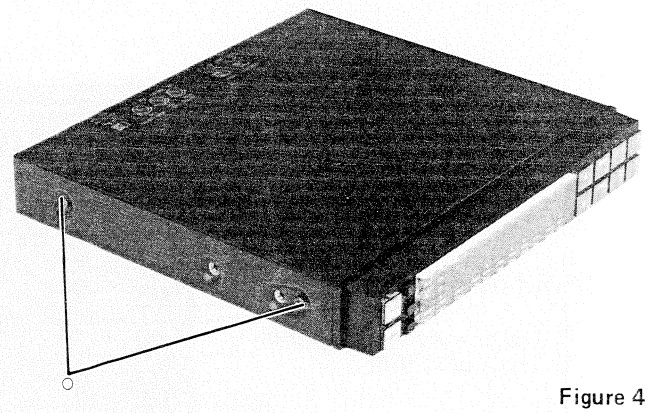


Figure 4

3. Removal of Nose Piece
   (1) Remove two screws marked " □ " as shown in Figures 5 and 6.

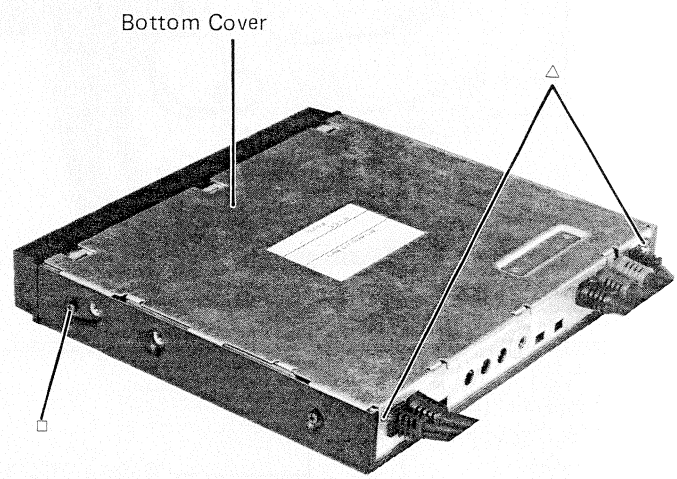


Figure 5

4. **Removal of LED Display**
   (1) Remove one screw marked " ※ " as shown in Figure 7.
   (2) Disconnect the flat cable from LED Display.

5. **Removal of Front P.C. Board**
   (1) Remove two screws marked " ● " as shown in Figure 7.
   (2) Disconnect the panel FPC from the front P.C. Board.

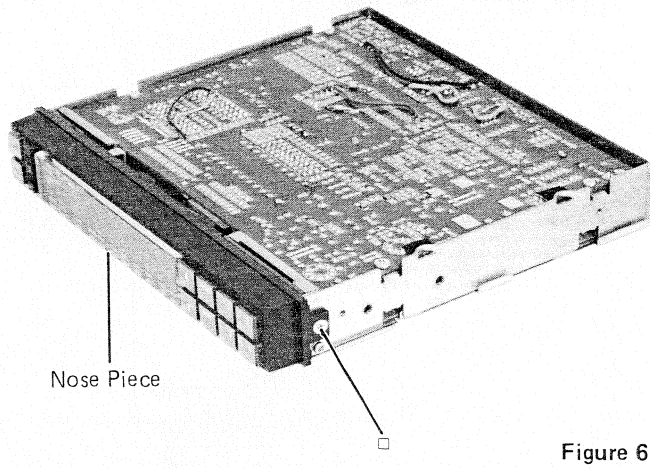


Figure 6

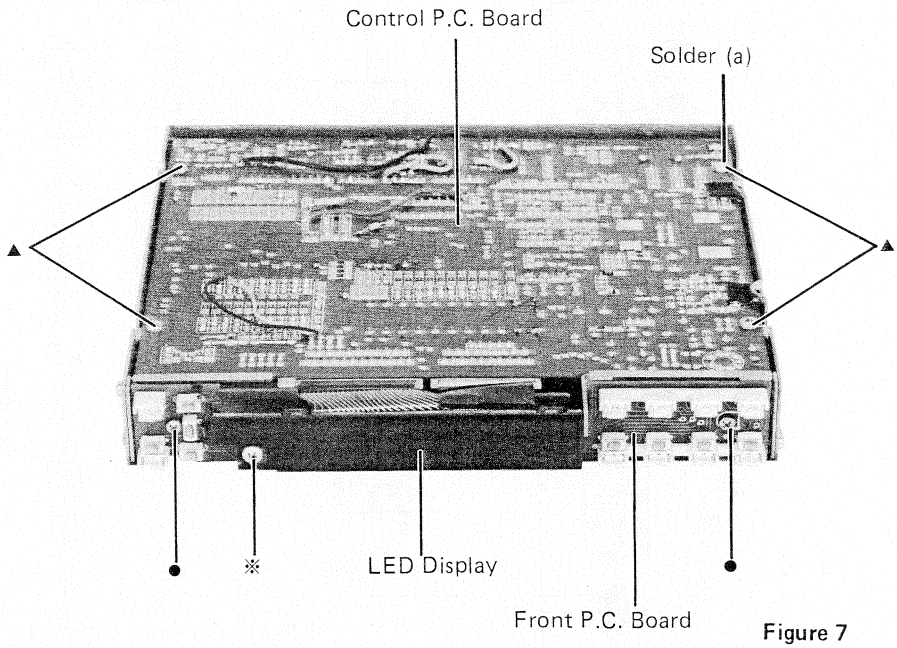


Figure 7

6. **Removal of Audio P.C. Board**
   (1) Remove seven connectors as shown in Figure 8.

7. **Removal of Control P.C. Board**
   (1) Remove solder (a) and four screws marked " ▲ " as shown in Figure 7.
   (2) Disconnect all wires from the control P.C. Board.

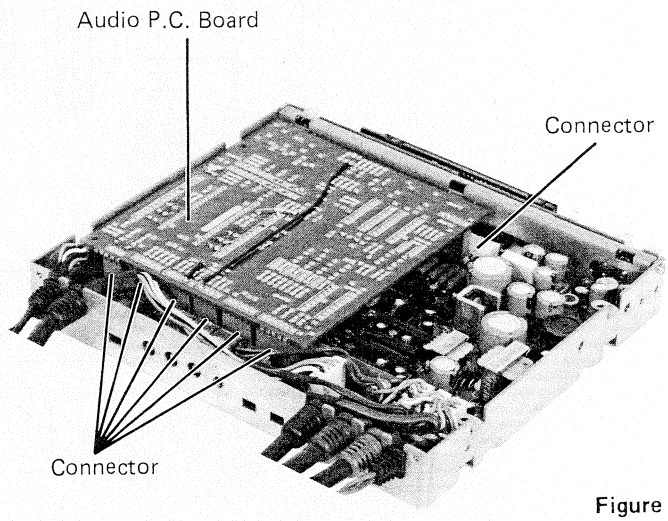
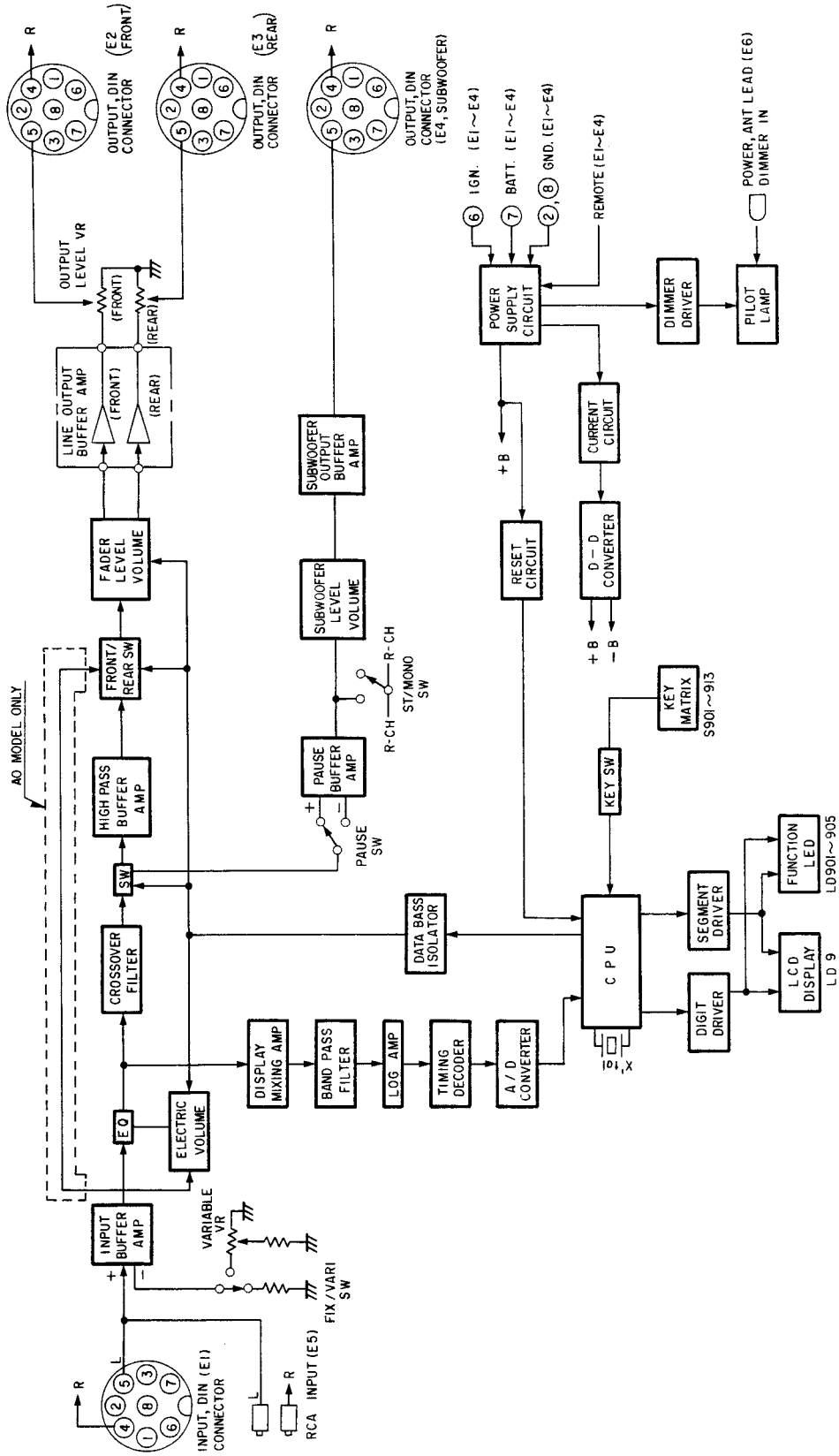


Figure 8

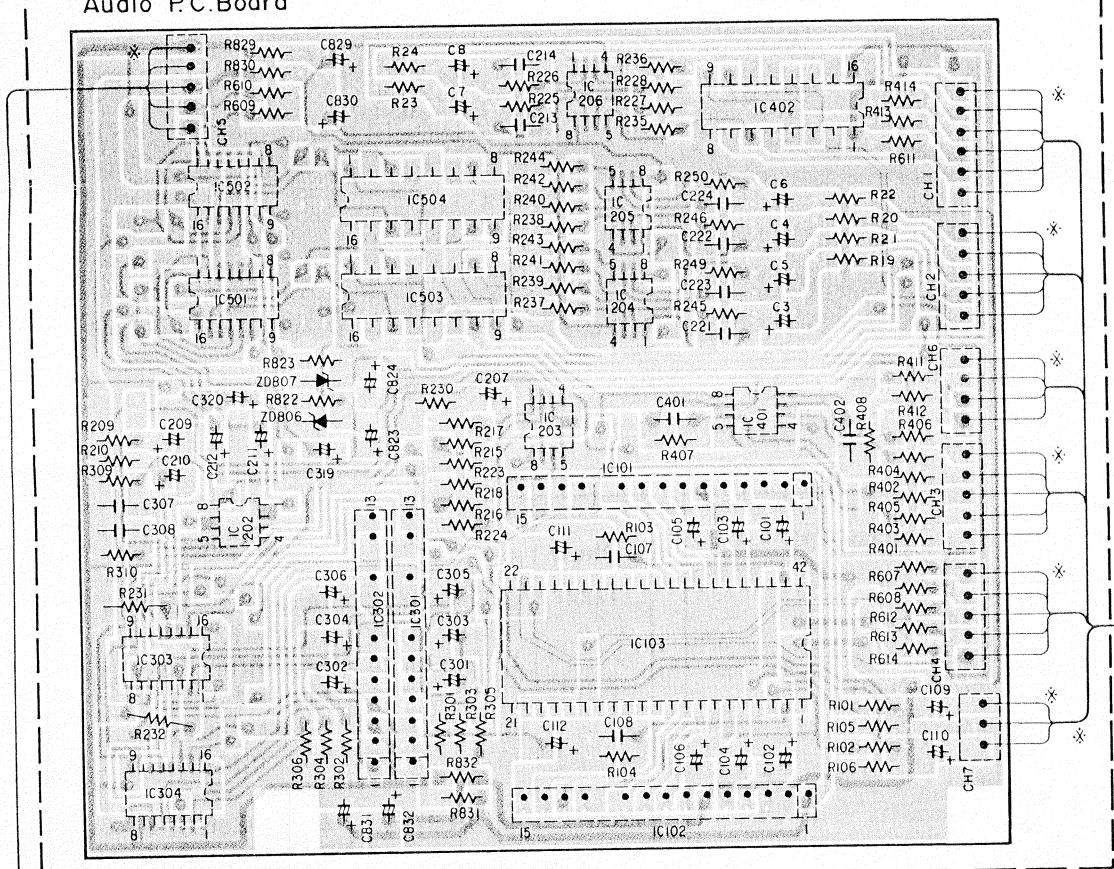
Block Diagram



Parts Layout on P.C. Boards and Wiring Diagram

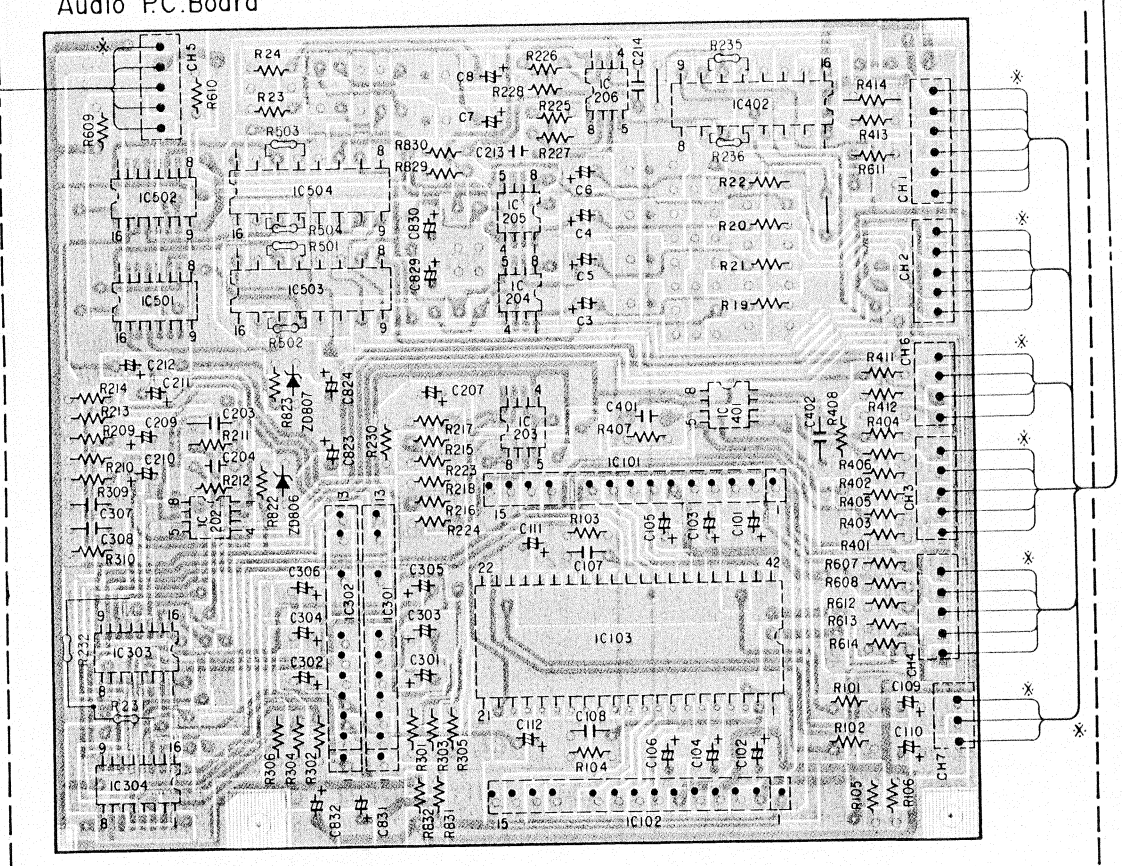
AO Model only

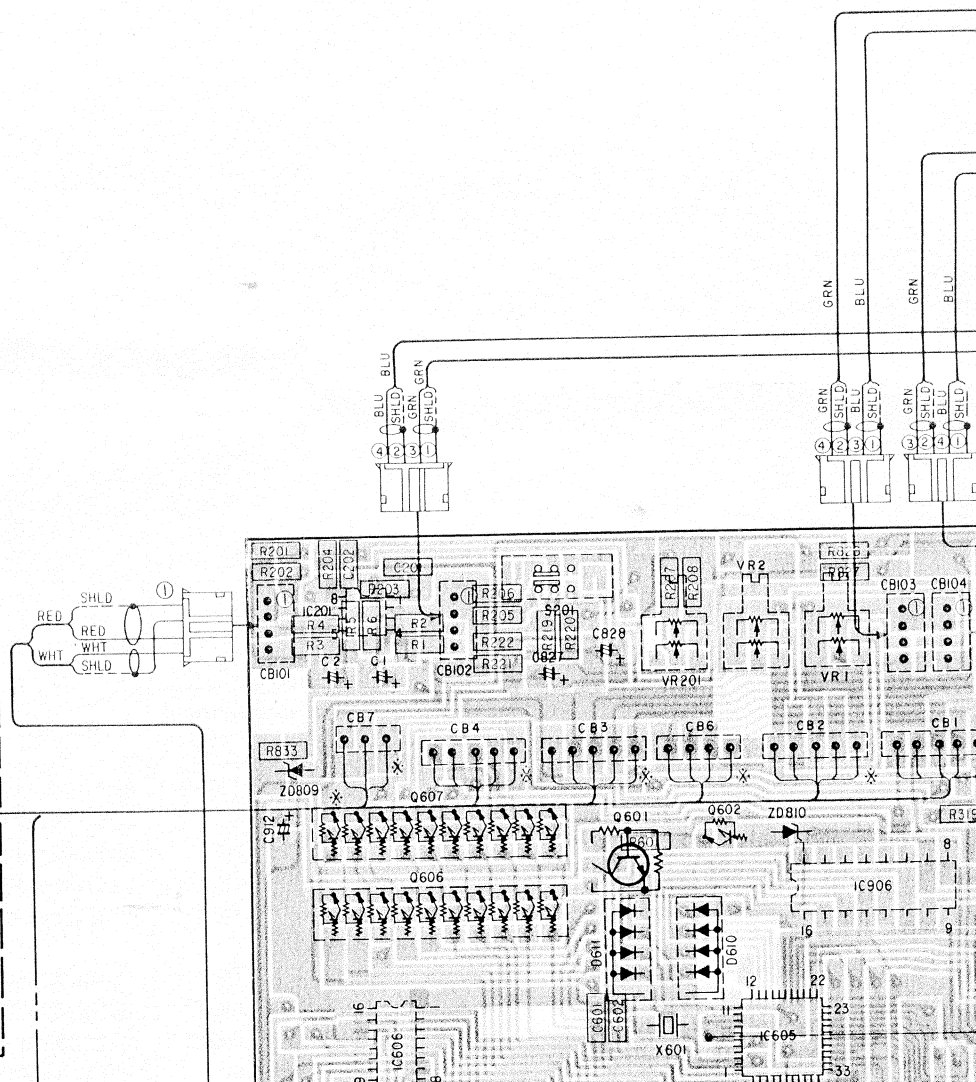
Audio P.C.Board

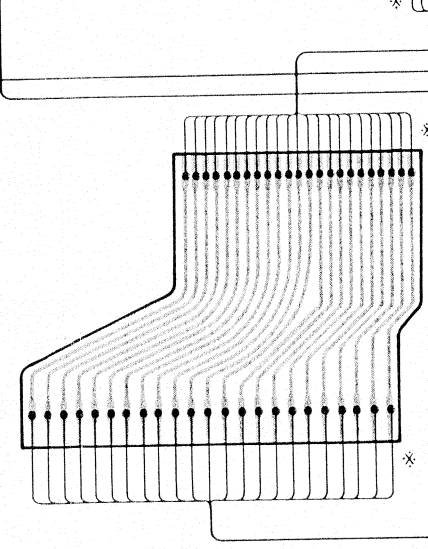


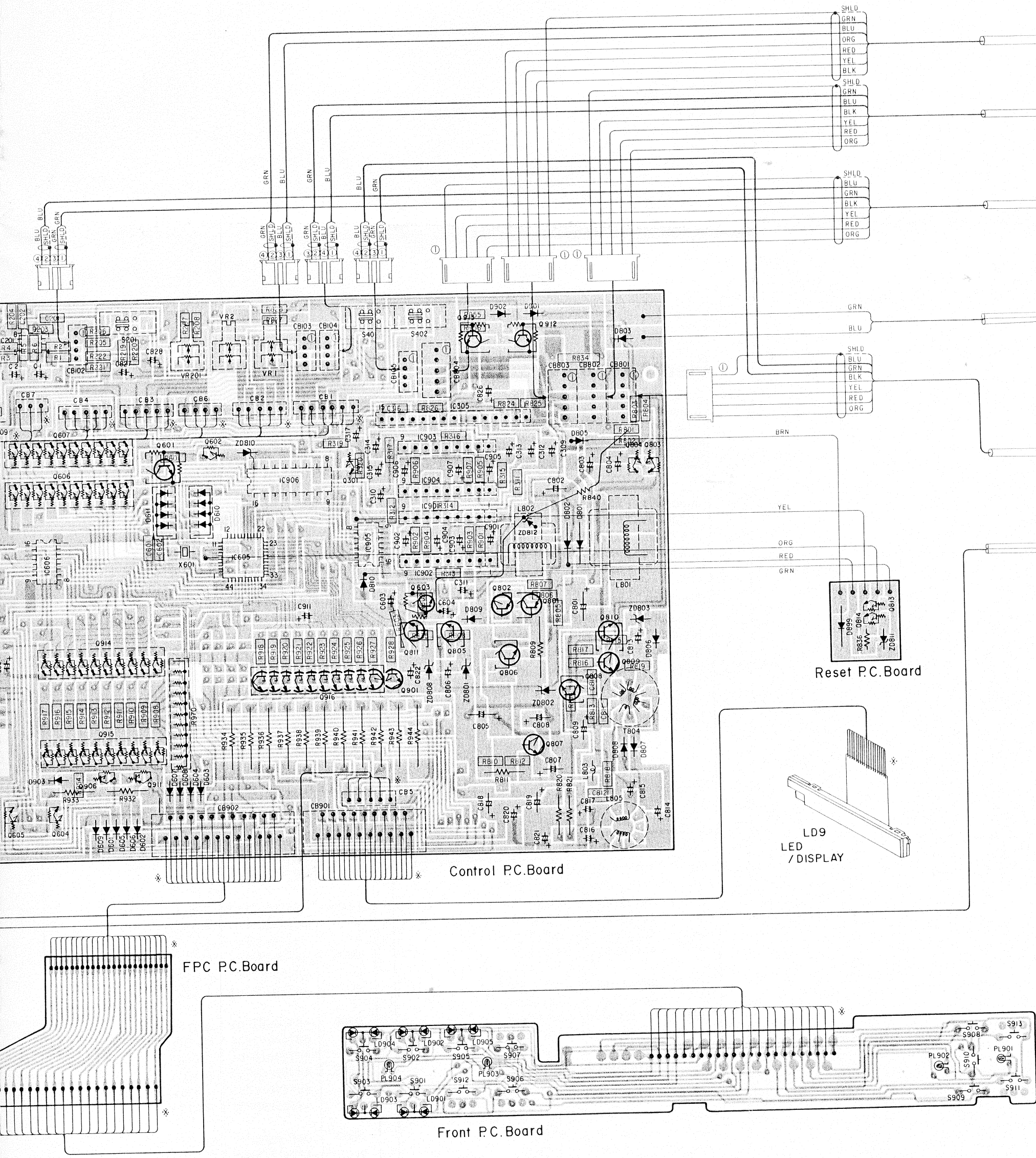
GO Model only

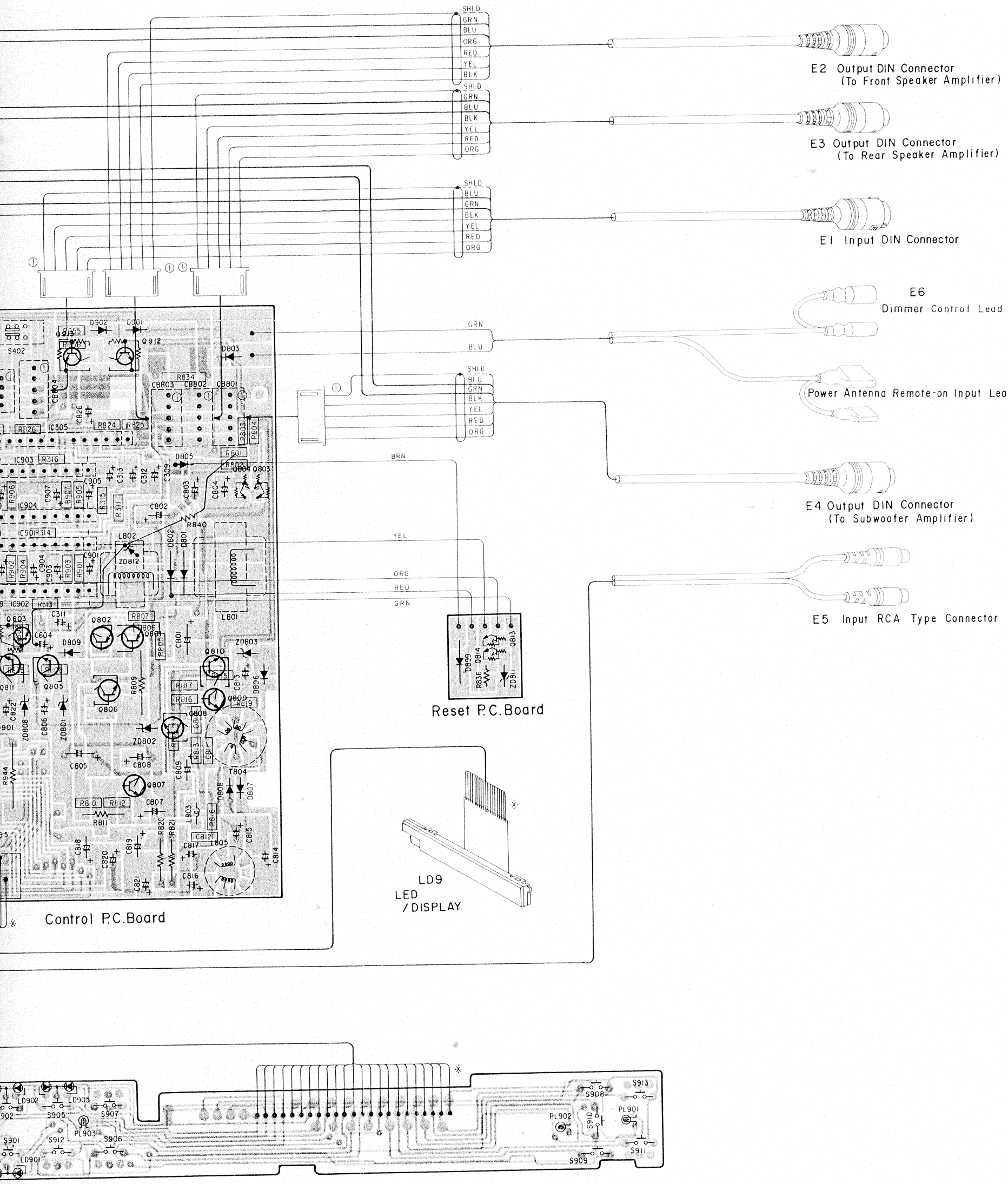
Audio P.C.Board








SHLD
GRN
BLU
ORG
RED
YEL
BLK
SHLD
GRN
BLU
BLK
YEL
RED
ORG
SHLD
BLU
GRN
BLK
YEL
RED
ORG
GRN
BLU
SHLD
BLU
GRN
BLK
YEL
RED
ORG
BRN
YEL
ORG
RED
GRN
Reset P.C.Board
LD9
LED
/DISPLAY
Control P.C.Board
FPC P.C.Board
Front P.C.Board



BLU . . . . . .Blue
GRN . . . . . .Green
BLK . . . . . .Black
GRY . . . . . .Gray
WHT . . . . . .White
RED . . . . . .Red
BRN . . . . . .Brown
ORG . . . . . .Orange
YEL . . . . . .Yellow
VIO . . . . . .Violet
GRN//WHT . . . . .Green/White
GRY/WHT . . . . . .Gray/White
GRY/YEL . . . . . .Gray/Yellow
GRN/YEL . . . . . .Green/Yellow

Electrical Parts List

Resistors: Carbon resistors under 1/4 watts are not mentioned in the parts list, please confirm them by schematic diagram.
uF = microfarads, pF = picofarads

Symbol No.	Part No.	Description
	Control P.C. Board	
	IC's	
IC201	51T72746F01	NJM2068M
IC305	51T71135F01	Hybrid, 24001
IC605	51T68099F01	68099F01
IC606	51T70771F01	HD14028BPF
or	51T73935F01	μPD4028BG
IC901	51T63901F01	BA6138
IC902	51T63901F01	BA6138
IC903	51T63901F01	BA6138
IC904	51T63901F01	BA6138
IC905	51T68962F01	HD14051BFP
or	51T73936F01	μPD4051BG
IC906	51T52393F01	M51901
	Transistors	
Q301	48T62963F06	DTC114Y
or	48T62540F04	UN1214
Q601	48T62963F06	DTC114Y
or	48T62540F04	UN1214
Q602	48T62963F06	DTC114Y
or	48T62540F04	UN1214
Q603	48T62963F06	DTC114Y
or	48T62540F04	UN1214
Q604	48T62963F06	DTC114Y
or	48T62540F04	UN1214
Q605	48T62963F06	DTC114Y
or	48T62540F04	UN1214
Q606	51T72173F01	Array DTC114YX10
Q607	51T72173F03	Array DTA114YX10
Q801	48T68904F01	2SB822
Q802	48T68904F01	2SB822
Q803	48T62963F06	DTC114Y
Q804	48T62963F06	DTC114Y
Q805	48T63085F01	2SD1225M
Q806	48T69176F02	2SC3421
Q807	48T63082F02	2SC2021M
Q808	48S43525F02	2SC1815
Q809	48T61218F01	2SD974A
Q810	48T61218F01	2SD974A
Q811	48T63085F01	2SD1225M
Q901	48T52508F01	2SC1545
Q906	40T62963F06	DTC114Y
Q911	48T62962F06	DTA114Y
Q912	48T62963F06	DTC114Y
Q913	48T62963F06	DTC114Y
Q914	51T72173F01	Array DTC114YX10
Q915	51T72173F03	Array DTA114YX10
Q916	51T72173F04	Array 2SC1545X10
	Diodes	
D601	48T58583F01	SS176
or	48T44813F01	MA165TA
or	48T68828F01	1SS133
D602	48T58583F01	SS176
or	48T44813F01	MA165TA
or	48T68828F01	1SS133
D603	48T58583F01	SS176
or	48T44813F01	MA165TA
or	48T68828F01	1SS133
D604	48T58583F01	SS176
or	48T44813F01	MA165TA
or	48T68828F01	1SS133
D605	48T58583F01	SS176
or	48T44813F01	MA165TA
or	48T68828F01	1SS133
D606	48T58583F01	SS176
or	48T44813F01	MA165TA
or	48T68828F01	1SS133
D607	48T58583F01	SS176
or	48T44813F01	MA165TA
or	48T68828F01	1SS133
D608	48T58583F01	SS176
or	48T44813F01	MA165TA
or	48T68828F01	1SS133
D609	48T58583F01	SS176
or	48T44813F01	MA165TA
or	48T68828F01	1SS133
D610	51T62554F02	Array DAN401
D611	51T62554F02	Array DAN401
D801	48C40235G02	10E2
D802	48C40235G02	10E2
D803	48T58583F01	SS176
or	48T44813F01	MA165TA
or	48T68828F01	1SS133
D805	48T58583F01	SS176
or	48T44813F01	MA165TA
or	48T68828F01	1SS133
D806	48T70933F01	1SS136
D807	48T70933F01	1SS136
D808	48T70933F01	1SS136
D809	48T58583F01	SS176
or	48T44813F01	MA165TA
or	48T68828F01	1SS133
D810	48T58583F01	SS176
or	48T44813F01	MA165TA
or	48T68828F01	1SS133
D901	48T58583F01	SS176
or	48T44813F01	MA165TA
or	48T68828F01	1SS133
D902	48T58583F01	SS176
or	48T44813F01	MA165TA
or	48T68828F01	1SS133
D903	48T58583F01	SS176
or	48T44813F01	MA165TA
or	48T68828F01	1SS133
ZD801	48T68697F23	Zener HZS6.2EB1
or	48T68699F15	Zener MTZ6.2-A
or	48T56372F28	Zener RD6.2E-B1
ZD802	48T68697F48	Zener HZS13EB1
or	48T68699F40	Zener MTZ13-A
or	48T56372F53	Zener RD13E-B1
ZD803	48T68697F37	Zener HZS9.1EB3
or	48T68699F29	Zener MTZ9.1-C
or	48T56372F42	Zener RD9.1E-B3
ZD808	48T68697F23	Zener HZS6.2EB1
or	48T68699F15	Zener MTZ6.2A
or	48T56372F28	Zener RD6.2E-B1
ZD809	48T68697F23	Zener HZS6.2EB1
or	48T68699F15	Zener MTZ6.2A
or	48T56372F28	Zener RD6.2E-B1
ZD810	48T68697F23	Zener HZS6.2EB1
or	48T68699F15	Zener MTZ6.2A
or	48T56372F28	Zener RD6.2E-B1
ZD812	48T68697F23	Zener HZS6.2E-B1
or	48T68699F15	Zener MTZ6.2A
or	48T56372F28	Zener RD6.2E-B1
	Inductors	
L801	25C40894G11	Choke, Trans.
L802	25T47510F01	Choke, Filter
L803	24T60743F01	RC-885
L805	24T60742F02	MC-102-2
	Transformers	
T804	25T60741F05	LC-15
	Switches	
S201	40T68063F01	Slide, SSJ-322A
S401	40T68063F01	Slide, SSJ-322A
S402	40T68063F01	Slide, SSJ-322A
	Crystal	
X601	91T60592F02	Ceramic Lock, CSA4.19MG
	Capacitors	
C1	23S61523F12	Electrolytic 10 uF/16V
C2	23S61523F12	Electrolytic 10 uF/16V
C201	08S53332F23	Chip 100 pF
C202	08S53332F23	Chip 100 pF
C309	23S61523F12	Electrolytic 10 uF/16V

Symbol No.	Part No.	Description	
C310	23S61523F12	Electrolytic	10 uF/16V
C311	23S61523F12	Electrolytic	10 uF/16V
C312	23S61523F12	Electrolytic	10 uF/16V
C313	23S61523F12	Electrolytic	10 uF/16V
C314	23S61523F12	Electrolytic	10 uF/16V
C315	23S61523F12	Electrolytic	10 uF/16V
C316	08S53332F23	Chip	100 pF
C317	23S61523F12	Electrolytic	10 uF/16V
C601	08S53332F17	Chip	33 pF
C602	08S53332F17	Chip	33 pF
C603	23S61523F30	Electrolytic	2.2 uF/50V
C604	23S57422F07	Electrolytic	3.3 uF/50V
C801	23C42170G31	Electrolytic	2200 uF/16V
C802	23C42170G30	Electrolytic	470 uF/16V
C803	23T73862F06	Electrolytic	100 uF/16V
C804	23S61523F12	Electrolytic	10 uF/16V
C805	23C42170G31	Electrolytic	2200 uF/16V
C806	23S61523F12	Electrolytic	10 uF/16V
C807	23T65374F06	Electrolytic	220 uF/16V
C808	23C42170G30	Electrolytic	470 uF/16V
C809	23C42170G30	Electrolytic	470 uF/16V
C810	08S53332F43	Chip	4700 pF
C811	08S53332F47	Chip	0.01 uF
C812	08S53332F39	Chip	2200 pF
C813	23S61523F13	Electrolytic	22 uF/16V
C814	23T73862F06	Electrolytic	100 uF/16V
C815	23T73862F06	Electrolytic	100 uF/16V
C816	23S61523F15	Electrolytic	47 uF/16V
C817	23S61523F15	Electrolytic	47 uF/16V
C818	23T65374F06	Electrolytic	220 uF/16V
C819	23T65374F06	Electrolytic	220 uF/16V
C820	23S41059P09	Tantalum	1.5 uF/25V
C821	23S41059P09	Tantalum	1.5 uF/25V
C822	23S61523F12	Electrolytic	10 uF/16V
C826	23T73861F07	Electrolytic	220 uF/16V
C827	23S61523F12	Electrolytic	10 uF/16V
C828	23S61523F12	Electrolytic	10 uF/16V
C834	23T73862F06	Electrolytic	100 uF/16V
C901	23S61523F12	Electrolytic	10 uF/16V
C902	23S61523F12	Electrolytic	10 uF/16V
C903	23S61523F12	Electrolytic	10 uF/16V
C904	23S61523F12	Electrolytic	10 uF/16V
C905	23S61523F12	Electrolytic	10 uF/16V
C906	23S61523F12	Electrolytic	10 uF/16V
C907	23S61523F12	Electrolytic	10 uF/16V

Symbol No.	Part No.	Description	
C911	23T73861F07	Electrolytic	220 uF/16V
C912	23T73861F07	Electrolytic	220 uF/16V

Resistors

All resistors are chip parts, 1/8W, ±5% unless otherwise noted.

R1	06S53330F53	1K ohm
R2	06S53330F53	1K ohm
R3	06S53330F53	1K ohm
R4	06S53330F53	1K ohm
R5	06S53330F77	10K ohm
R6	06S53330F77	10K ohm
R201	06S53331F02	100K ohm
R202	06S53331F02	100K ohm
R203	06S53330F69	4.7K ohm
R204	06S53330F69	4.7K ohm
R205	06S53330F53	1K ohm
R206	06S53330F53	1K ohm
R207	06S53330F34	160 ohm
R208	06S53330F34	160 ohm
R219	06S53330F60	2K ohm
R220	06S53330F60	2K ohm
R221	06S53330F44	430 ohm
R222	06S53330F44	430 ohm
R311	06S53330F37	220 ohm
R312	06S53330F37	220 ohm
R313	06S53330F37	220 ohm
R314	06S53330F37	220 ohm
R315	06S53330F37	220 ohm
R316	06S53330F37	220 ohm
R317	06S53330F37	220 ohm
R319	06S53330F68	4.3K ohm
R320	06S53331F09	200K ohm
R601	06S53330F77	10K ohm
R602	06S53330F77	10K ohm
R603	06S53330F94	51K ohm
R801	06S53330F77	10K ohm
R802	06S53330F77	10K ohm
R803	06S53330F69	4.7K ohm
R804	06S53330F85	22K ohm
R805	06S53330F61	2.2K ohm

Symbol No.	Part No.	Description
R806	06S53330F55	1.2K ohm
R807	06S53330F55	1.2K ohm
R808	06S53330F63	2.7K ohm
R809	06C44652G07	Metal Film 68 ohm 1W
R810	06S53330F21	47 ohm
R811	06T71921F01	Cement 1 ohm 2W
R812	06S53330F53	1K ohm
R813	06S53330F89	33K ohm
R814	06S53330F61	2.2K ohm
R815	06S53330F55	1.2K ohm
R816	06S53330F05	10 ohm
R817	06S53330F05	10 ohm
R818	06S53330F37	220 ohm
R819	06S53330F45	470 ohm
R824	06S53330F77	10K ohm
R825	06S53330F77	10K ohm
R826	06S53330F77	10K ohm
R827	06S53330F17	33 ohm
R828	06S53330F17	33 ohm
R833	06S53330F53	1K ohm
R834	06T74049F01	4.7 ohm 2W
R835	06S53330F77	10K ohm
R901	06S53331F10	220K ohm
R902	06S53331F10	220K ohm
R903	06S53331F10	220K ohm
R904	06S53331F10	220K ohm
R905	06S53331F10	220K ohm
R906	06S53331F10	220K ohm
R907	06S53331F10	220K ohm
R908	06S53330F77	10K ohm
R909	06S53330F77	10K ohm
R910	06S53330F77	10K ohm
R911	06S53330F77	10K ohm
R912	06S53330F77	10K ohm
R913	06S53330F77	10K ohm
R914	06S53330F77	10K ohm
R915	06S53330F77	10K ohm
R916	06S53330F77	10K ohm
R917	06S53330F77	10K ohm
R918	06S53330F77	10K ohm
R919	06S53330F77	10K ohm
R920	06S53330F77	10K ohm
R921	06S53330F77	10K ohm
R922	06S53330F77	10K ohm
R923	06S53330F77	10K ohm

Symbol No.	Part No.	Description
R924	06S53330F77	10K ohm
R925	06S53330F77	10K ohm
R926	06S53330F77	10K ohm
R927	06S53330F77	10K ohm
R928	06S53330F77	10K ohm
R934	06C44652G06	Metal Film 270 ohm 1W
R935	06C44652G06	Metal Film 270 ohm 1W
R936	06C44652G06	Metal Film 270 ohm 1W
R937	06C44652G06	Metal Film 270 ohm 1W
R938	06C44652G06	Metal Film 270 ohm 1W
R939	06C44652G06	Metal Film 270 ohm 1W
R940	06C44652G06	Metal Film 270 ohm 1W
R941	06C44652G06	Metal Film 270 ohm 1W
R942	06C44652G06	Metal Film 270 ohm 1W
R943	06C44652G07	Metal Film 68 ohm 1W
R944	06C44652G07	Metal Film 68 ohm 1W
R954	06S53330F94	51K ohm
R955	06S53331F08	180K ohm
R956	06S53330F77	10K ohm
R970	51T72174F02	Array 4.7K ohm x 10
VR1	18T63938F03	Volume 10K ohm x 2
VR2	18T63938F03	Volume 10K ohm x 2
VR201	18T63938F04	Volume 10K ohm x 2

Audio P.C. Board

IC's

IC101	51T72171F01	Hybrid 21008
IC102	51T72171F01	Hybrid 21008
IC103	51T71136F01	TC9187
IC202	51T63893F01	μPC4558BG
IC203	51T72746F01	NJM2068M
IC204	51T72746F01	NJM2068M
IC205	51T72746F01	NJM2068M
IC206	51T72746F01	NJM2068M
IC301	51T72172F01	Hybrid 25001
IC302	51T72172F01	Hybrid 25001
IC303	51T70772F01	HD14052BFP
or	51T73937F01	μPD4052BG
IC304	51T70772F01	HD14052BFP
or	51T73937F01	μPD4052BG
IC401	51T72746F01	NJM2068M

Symbol No.	Part No.	Description
IC402	51T62903F01	TC9154P
IC501	51T70773F01	HD14053BFP
or	51T72745F01	μPD4053BG
IC502	51T70773F01	HD14053BFP
or	51T72745F01	μPD4053BG
IC503	51T62903F01	TC9154P
IC504	51T62903F01	TC9154P
Diodes		
ZD806	48T68697F23	Zener HZS6.2EB1
or	48T68699F15	Zener MTZ6.2-A
or	48T56372F28	Zener RD6.2E-B1
ZD807	48T68697F23	Zener HZS6.2EB1
or	48T68699F15	Zener MTZ6.2-A
or	48T56372F28	Zener RD6.2E-B1
Capacitors		
C3	23S61523F12	Electrolytic 10 uF/16V
C4	23S61523F12	Electrolytic 10 uF/16V
C5	23S61523F12	Electrolytic 10 uF/16V
C6	23S61523F12	Electrolytic 10 uF/16V
C7	23S61523F12	Electrolytic 10 uF/16V
C8	23S61523F12	Electrolytic 10 uF/16V
C101	23S61523F30	Electrolytic 2.2 uF/50V
C102	23S61523F30	Electrolytic 2.2 uF/50V
C103	23S61523F29	Electrolytic 1 uF/50V
C104	23S61523F29	Electrolytic 1 uF/50V
C105	23S61523F28	Electrolytic 0.47 uF/50V
C106	23S61523F28	Electrolytic 0.47 uF/50V
C107	08T65480F37	Ceramic 100 pF
C108	08T65480F37	Ceramic 100 pF
C109	23S61523F12	Electrolytic 10 uF/16V
C110	23S61523F12	Electrolytic 10 uF/16V
C111	23S61523F12	Electrolytic 10 uF/16V
C112	23S61523F12	Electrolytic 10 uF/16V
▲ C203	08T65480F37	Ceramic 100 pF
▲ C204	08T65480F37	Ceramic 100 pF
C207	23S61523F12	Electrolytic 10 uF/16V
C209	23S61523F12	Electrolytic 10 uF/16V
C210	23S61523F12	Electrolytic 10 uF/16V
● C211	23S61523F06	Electrolytic 33 uF/6.3V
▲ C211	23S61523F12	Electrolytic 10 uF/16V
● C212	23S61523F06	Electrolytic 33 uF/6.3V
▲ C212	23S61523F12	Electrolytic 10 uF/16V
C213	08T57705F67	Mylar 0.01 uF
C214	08T57705F67	Mylar 0.01 uF
● C221	08T65480F37	Ceramic 100 pF
● C222	08T65480F37	Ceramic 100 pF
● C223	08T65480F37	Ceramic 100 pF
● C224	08T65480F37	Ceramic 100 pF
C301	23S61523F12	Electrolytic 10 uF/16V
C302	23S61523F12	Electrolytic 10 uF/16V
C303	23S61523F12	Electrolytic 10 uF/16V
C304	23S61523F12	Electrolytic 10 uF/16V
C305	23S61523F12	Electrolytic 10 uF/16V
C306	23S61523F12	Electrolytic 10 uF/16V
C307	08T57851F13	TF 0.1 uF
C308	08T57851F13	TF 0.1 uF
● C319	23S61523F06	Electrolytic 33 uF/6.3V
● C320	23S61523F06	Electrolytic 33 uF/6.3V
C401	08T57705F69	Mylar 0.015 uF
C402	08T57705F69	Mylar 0.015 uF
C823	23S61523F12	Electrolytic 10 uF/16V
C824	23S61523F12	Electrolytic 10 uF/16V
C829	23S61523F12	Electrolytic 10 uF/16V
C830	23S61523F12	Electrolytic 10 uF/16V
C831	23S41059P26	Tantalum 10 uF/16V
C832	23S41059P26	Tantalum 10 uF/16V

Reset P.C. Board

Transistors/Diodes		
Q813	48T58321F04	DTC144WA
Q814	48T58321F04	DTC144WA
D899	48T40477U01	Diode, 1N4003
ZD811	48T68697F23	Diode, Zener HZS6.2E-B1

Front P.C. Board

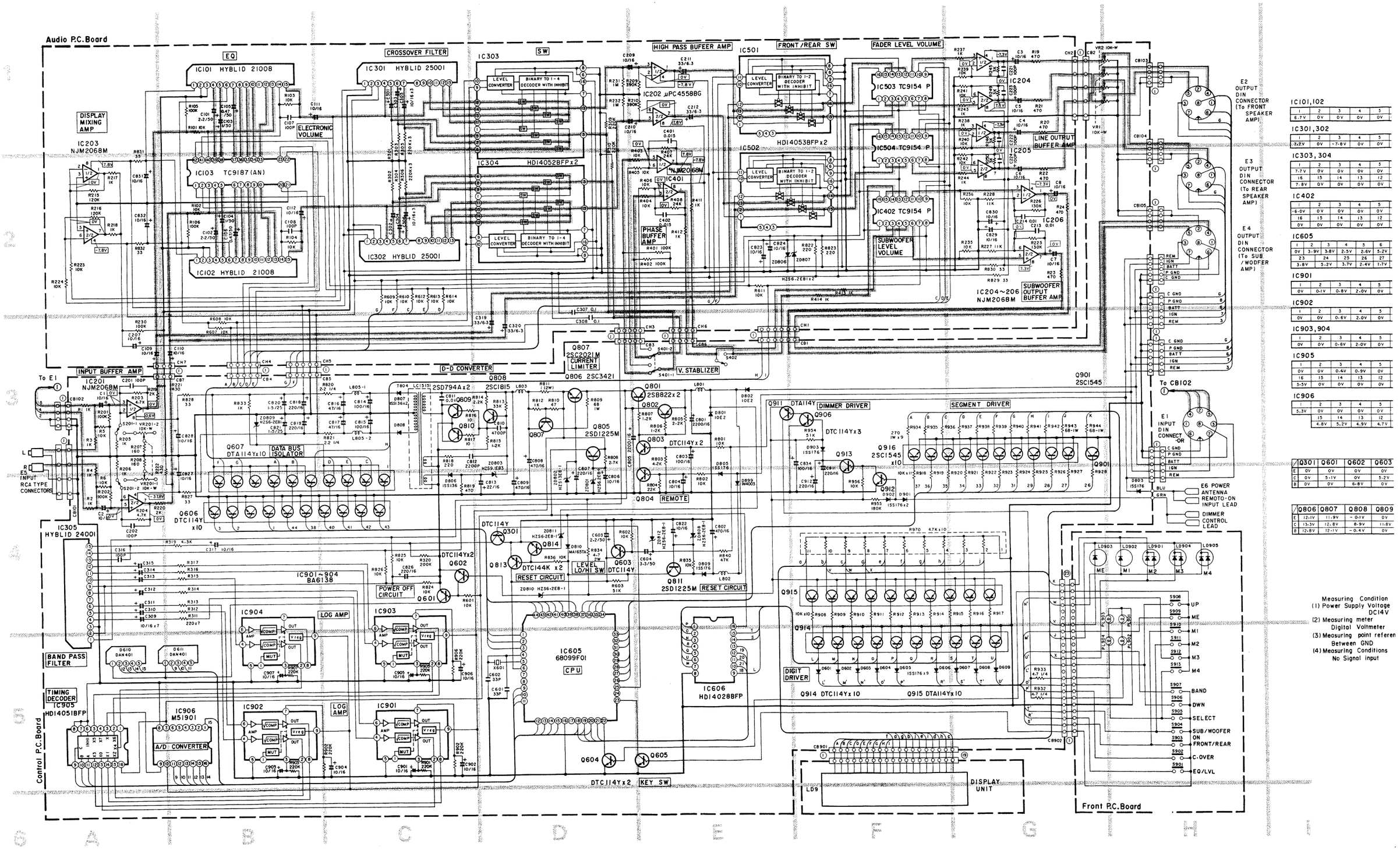
LED's		
LD901	48T72180F01	2-Color, (ORG/GREEN) (2)
LD902	48T72180F01	2-Color, (ORG/GREEN) (1)
LD903	48T72180F01	2-Color, (ORG/GREEN) (ME)
LD904	48T72180F01	2-Color, (ORG/GREEN) (3)
LD905	48T72180F01	2-Color, (ORG/GREEN) (4)

● : For North American Model (AO) only
▲: For General Foreign Model (GO) only
Others : Common

Symbol No.	Part No.	Description
	Switches	
S901	40T62951F02	Tact, H-2 (EQ/LVL)
S902	40T62951F02	Tact, H-2 (COVER)
S903	40T62951F02	Tact, H-2 (F.R)
S904	40T62951F02	Tact, H-2 (SUB/WOOFER)
S905	40T62951F02	Tact, H-2 (SLED)
S906	40T62951F02	Tact, H-2 (DWN)
S907	40T62951F02	Tact, H-2 (BAND)
S908	40T62951F02	Tact, H-2 (UP)
S909	40T62951F02	Tact, H-2 (ME)
S910	40T62951F02	Tact, H-2 (M1)
S911	40T62951F02	Tact, H-2 (M2)
S912	40T62951F02	Tact, H-2 (M3)
S913	40T62951F02	Tact, H-2 (M4)
	Lamps	
PL901	65T63304F05	Pilot, 6V-65mA
PL902	65T63304F05	Pilot, 6V-65mA
PL903	65T63304F05	Pilot, 6V-65mA
PL904	65T63304F05	Pilot, 6V-65mA
	Miscellaneous	
E1	01T72181F01	Input, DIN Connector
E2	01T72182F01	Output, DIN Connector (To Front Speaker Amplifier)
E3	01T72182F02	Output, DIN Connector (To Rear Speaker Amplifier)
E4	01T72182F03	Output, DIN Connector (To Subwoofer Amplifier)
E5	01T69023F02	Input RCA Type Connector
E6	01T69024F03	Power Antenna Remote-on Input Lead/Dimmer Control Lead
LD9	01T72045F01	LED, Display

Symbol No.	Part No.	Description

Schematic Diagram For North American model only (AO)



IC101,102					
1	2	3	4	5	
6.7V	0V	0V	0V	0V	

IC301,302				
1	2	3	4	5
7.2V	0V	-7.8V	0V	0V

IC303,304				
1	2	3	4	5
7.7V	0V	0V	0V	0V
16	15	14	13	12
7.8V	0V	0V	0V	0V

IC402				
1	2	3	4	5
-6.0V	0V	0V	0V	0V
16	15	14	13	12
0V	0V	0V	0V	0V

IC605					
1	2	3	4	5	6
0V	3.9V	3.8V	2.5V	2.6V	5.2V
23	24	25	26	27	
3.8V	5.2V	3.7V	2.4V	1.7V	

IC901				
1	2	3	4	5
0V	0.1V	0.8V	2.0V	0V

IC902				
1	2	3	4	5
0V	0V	0.6V	2.0V	0V

IC903,904				
1	2	3	4	5
0V	0V	0.6V	2.0V	0V

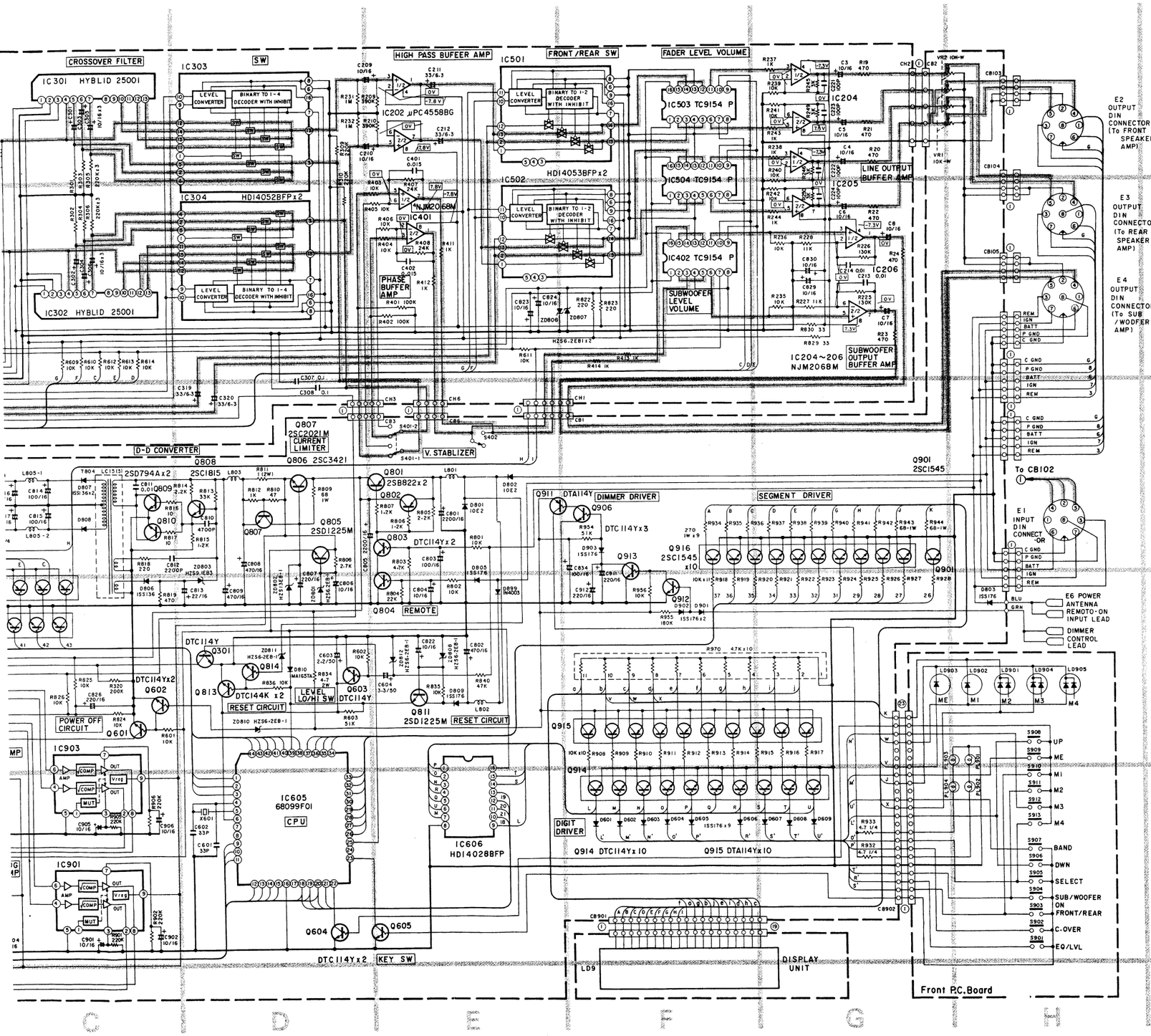
IC905					
1	2	3	4	5	
0V	0V	0.4V	0.9V	0V	
16	15	14	13	12	
5.5V	0V	0V	0V	0V	

IC906					
1	2	3	4	5	6
5.3V	0V	0V	0V	0V	
	15	14	13	12	
	4.8V	5.2V	4.9V	4.7V	

	Q301	Q601	Q602	Q603
E	0V	0V	0V	0V
C	0V	5.1V	0V	5.2V
B	0V	0V	6.8V	0V

	Q806	Q807	Q808	Q809
E	12.1V	11.9V	-0.1V	0V
C	13.3V	12.8V	8.9V	11.8V
B	12.8V	12.1V	-0.4V	0V

an model only (AO)



IC101,102

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
6.7V	0V	0V	0V	0V	-6.7V	0V	0V	0V	0V	—	0V	0V	0V	0V

IC301,302

1	2	3	4	5	6	7	8	9	10	11	12	13
7.7V	0V	-7.8V	0V	0V	0V	0V	—	—	0V	—	0V	0V

IC303,304

1	2	3	4	5	6	7	8
7.7V	0V	0V	0V	0V	0V	-7.8V	0V
16	15	14	13	12	11	10	9
7.8V	0V	0V	0V	0V	0V	-11V	-11V

IC503,504

1	2	3	4	5	6	7	8
-6.0V	0V	0V	0V	0V	0V	-11.2V	0V
16	15	14	13	12	11	10	9
6.0V	0V	0V	0V	0V	0V	-1.2V	-1.2V

IC402

1	2	3	4	5	6	7	8
-6.0V	0V	0V	0V	0V	0V	-6.0V	0V
16	15	14	13	12	11	10	9
0V	0V	0V	0V	0V	0V	-1.2V	-1.2V

IC606

1	2	3	4	5	6	7	8
0.4V	0V	0.4V	0.4V	0.4V	0.4V	0.4V	0V
16	15	14	13	12	11	10	9
5.5V	0.4V	0.4V	2.7V	2.7V	1.8V	3.1V	0.4V

IC605

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
0V	3.9V	3.8V	2.5V	2.6V	5.2V	0V	5.1V	0.8V	4.8V	4.9V	5.2V	4.9V	5.2V	0V	5.3V	3.1V	2.7V	1.8V	5.2V		
23		24		25		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
3.8V		5.2V		3.7V		2.4V	1.7V			0V			2.8V	0V	0.4V	0.4V	0V	5.2V			0V			

IC901

1	2	3	4	5	6	7	8	9
0V	0.1V	0.8V	2.0V	0V	2.0V	0.6V	0V	13.0V

IC902

1	2	3	4	5	6	7	8	9
0V	0V	0.6V	2.0V	0V	2.0V	0.7V	0V	12.0V

IC903,904

1	2	3	4	5	6	7	8	9
0V	0V	0.6V	2.0V	0V	2.0V	0.6V	0V	12.0V

IC905

1	2	3	4	5	6	7	8
0V	0V	0.4V	0.9V	0V	0V	0V	0V
16	15	14	13	12	11	10	9
5.5V	0V	0V	0V	0V	3.1V	2.7V	2.7V

IC906

1	2	3	4	5	6	7	8
5.3V	0V	0V	0V	0V	0V	5.5V	0V
	15	14	13	12	11	10	9
	4.8V	5.2V	4.9V	4.7V	0.8V	12.0V	0.4V

	E	1	2	3	4	5	6	7	8	9	10
Q607				7.7V					6.0V		
	C	7.7V	7.7V	0V	0V	-1.1V	-1.1V	-1.2V	-1.2V	-1.2V	-6.0V
	B	0V			7.7V				6.0V		
Q606	E							0V			
	C	0V	0V	0V	0V	7.7V	7.7V	6.0V	6.0V	6.0V	6.0V
	B	3.8V	3.9V				0V				
Q914	E							0V			
	C	10.5V	10.4V	10.2V	10.2V	10.4V			10.5V		
	B							0.4V			
Q915	E							12.6V			
	C	10.5V	11.1V	1.1V	1.1V	1.1V	1.1V	1.0V	1.1V	1.1V	1.1V
	B	11.5V	11.3V	11.1V	11.1V	11.3V			11.4V		
Q916	E		0V				0.1V	0V	0.1V	0.1V	0V
	C	3.7V		10.3V			10V	10V	5.2V	8.3V	8.2V
	B	0.5V		0V			0.1V	0.1V	0V		
		1	2	3	4	5	6	7	8	9	10

Q301	Q601	Q602	Q603	Q604	Q605	Q801	Q802	Q803	Q804	Q805
E 0V	0V	0V	0V	0V	0V	13.4V	13.4V	0.1V	0V	5.5V
C 0V	5.1V	0V	5.2V	5.2V	5.27V	13.3V	13.3V	0.2V	0.1V	12.1V
B 0V	0V	6.8V	0V	0V	0V	12.7V	12.7V	0V	5.1V	6.0V

Q806	Q807	Q808	Q809	Q810	Q811	Q901	Q906	Q911	Q912	Q913
E 12.1V	11.9V	-0.1V	0V	0V	5.3V	0.7V	0V	12.6V	0V	0V
C 13.3V	12.8V	8.9V	11.8V	11.8V	12.8V	2.3V	0V	10.4V	0V	2.3V
B 12.8V	12.1V	-0.4V	0V	-0.1V	5.9V	0V	2.4V	0V	1.1V	0V

D610

1	2	3	4	5
5.1V	5.2V	4.8V	5.2V	5.2V

D611

1	2	3	4	5
5.1V	0.5V	4.7V	4.9V	0.6V

Measuring Condition
(1) Power Supply Voltage DC14V
(2) Measuring meter Digital Voltmeter
(3) Measuring point reference Between GND
(4) Measuring Conditions No Signal Input

IC103

1	2	3	4	5	6	7	8	9	11	12
-6V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V
12	13	14	15	16	17	18	19	20	21	22
0V	0V	0V	0V	0V	0V	0V	0V	-1.3V	0V	-1.3V
23	24	25	26	27	28	29	30	31	32	33
-1.3V	6V	0V	0V	6V	6V	0V	0V	0V	0V	0V
34	35	36	37	38	39	40	41	42		
0V	0V	0V	0V	0V	0V	0V	0V	6V		

IC501

1	2	3	4	5	6	7	8
0V	0V	—	—	—	0V	-7.8V	0V
9	10	11	12	13	14	15	16
0V	7.7V	7.7V	0V	0V	0V	0V	7.8V

IC502

1	2	3	4	5	6	7	8
0V	0V	—	—	—	0V	-7.8V	0V
9	10	11	12	13	14	15	16
0V	7.7V	7.7V	0V	0V	0V	0V	7.8V

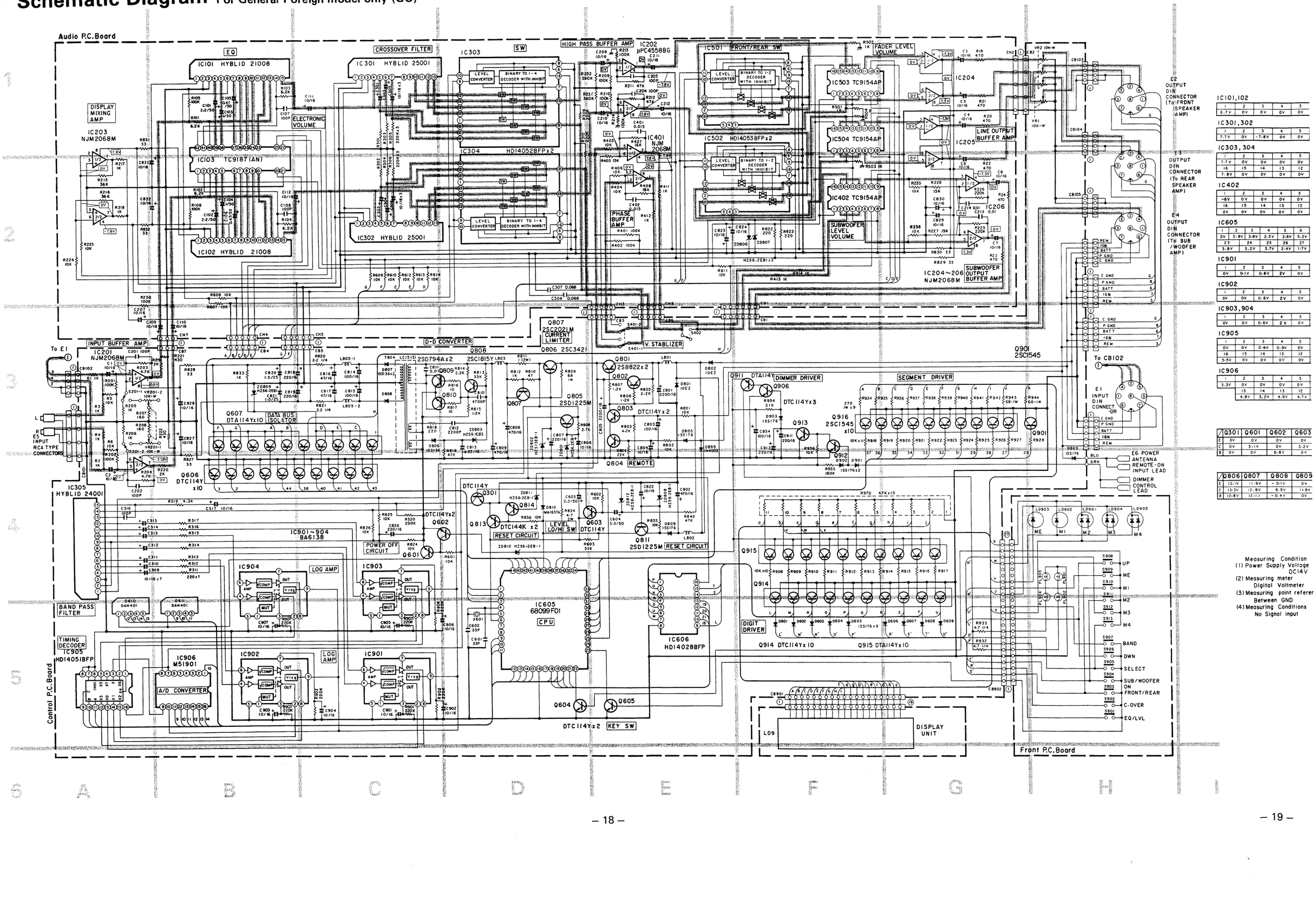
IC305

1	2	3	4	5	6	7	8
13.2V	6.6V	0V	6.6V	6.6V	6.6V	—	6.6V
9	10	11	12	13	14	15	
6.6V	6.6V	6.6V	6.6V	6.6V	6.6V	6.6V	

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

Schematic Diagram For General Foreign model only (GO)



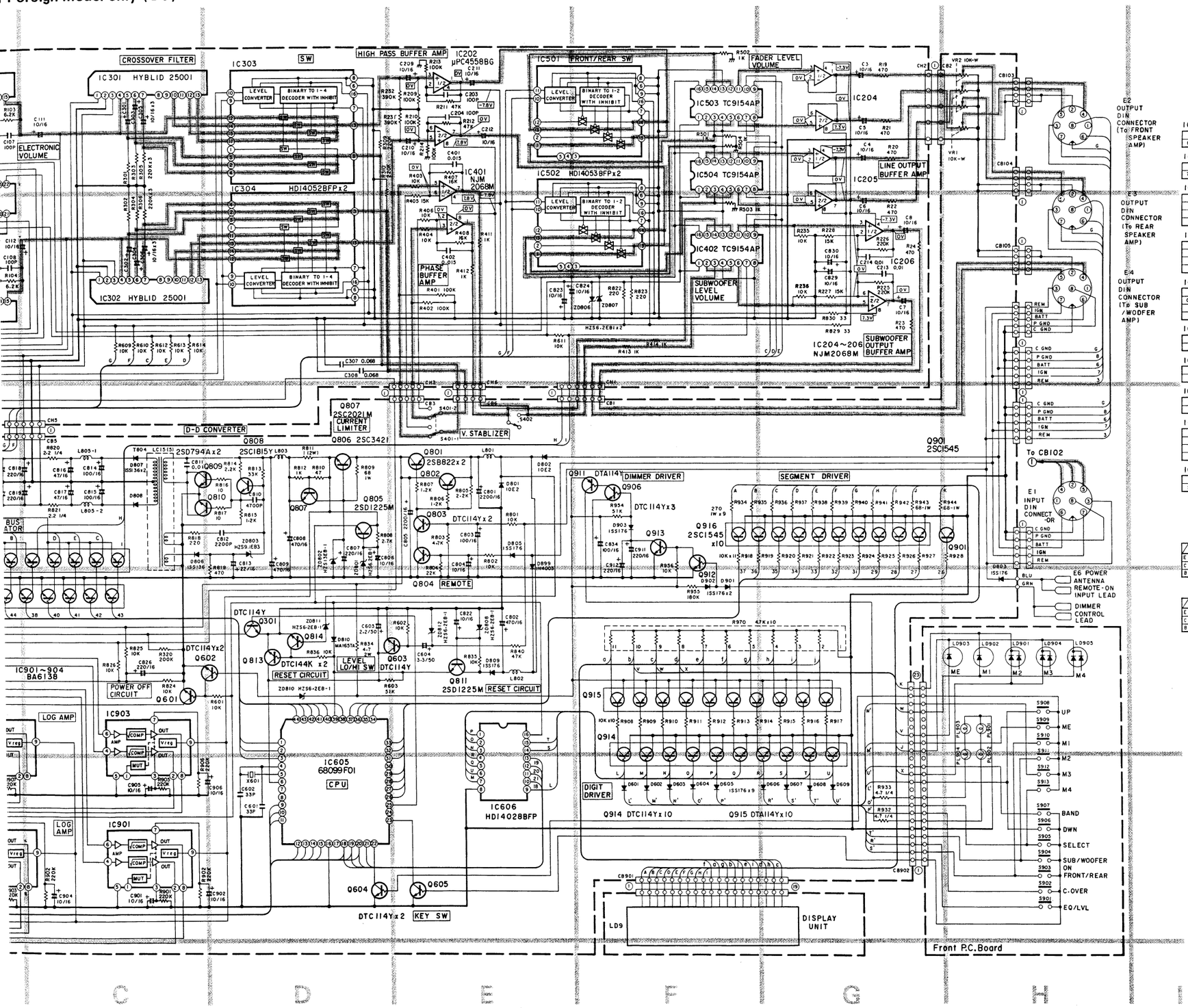
	1	2	3	4	5
IC101,102					
	6.7V	0V	0V	0V	0V
IC301,302					
	7.7V	0V	-7.8V	0V	0V
IC303,304					
	7.7V	0V	0V	0V	0V
	16	15	14	13	12
	7.8V	0V	0V	0V	0V
IC402					
	-6V	0V	0V	0V	0V
	16	15	14	13	12
	0V	0V	0V	0V	0V
IC605					
	0V	3.9V	3.8V	2.5V	2.6V
	23	24	25	26	27
	3.8V	5.2V	3.7V	2.4V	1.7V
IC901					
	0V	0.1V	0.8V	2V	0V
IC902					
	0V	0V	0.6V	2V	0V
IC903,904					
	0V	0V	0.6V	2V	0V
IC905					
	0V	0V	0.4V	0.9V	0V
	16	15	14	13	12
	5.5V	0V	0V	0V	0V
IC906					
	5.3V	0V	0V	0V	0V
		15	14	13	12
		4.8V	5.2V	4.9V	4.7V

	Q301	Q601	Q602	Q603
C	0V	0V	0V	0V
C	0V	5.1V	0V	5.2V
B	0V	0V	6.8V	0V

	Q806	Q807	Q808	Q809
E	12.1V	11.9V	-0.1V	0V
C	13.3V	12.8V	8.9V	11.8V
B	12.8V	12.1V	-0.4V	0V

Measuring Condition
(1) Power Supply Voltage DC14V
(2) Measuring meter Digital Voltmeter
(3) Measuring point referer Between GND
(4) Measuring Conditions No Signal input

Foreign model only (GO)



IC101,102

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
6.7V	0V	0V	0V	0V	-6.7V	0V	0V	0V	0V	—	0V	0V	0V	

IC301,302

1	2	3	4	5	6	7	8	9	10	11	12	13
7.7V	0V	-7.8V	0V	0V	0V	0V	—	—	0V	—	0V	0V

IC303,304

1	2	3	4	5	6	7	8
7.7V	0V	0V	0V	0V	-7.8V	0V	
16	15	14	13	12	11	10	9
7.8V	0V	0V	0V	0V	-1.1V	-1.1V	

IC503,504

1	2	3	4	5	6	7	8
-6V	0V	0V	0V	0V	-1.2V	0V	
16	15	14	13	12	11	10	9
6V	0V	0V	0V	0V	-1.2V	-1.2V	

IC402

1	2	3	4	5	6	7	8
-6V	0V	0V	0V	0V	-6V	0V	
16	15	14	13	12	11	10	9
0V	0V	0V	0V	0V	-1.2V	-1.2V	

IC606

1	2	3	4	5	6	7	8
0.4V	0V	0.4V	0.4V	0.4V	0.4V	0.4V	0V
16	15	14	13	12	11	10	9
5.5V	0.4V	0.4V	2.7V	2.7V	1.8V	3.1V	0.4V

IC605

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
0V	3.9V	3.8V	2.5V	2.6V	5.2V	0V	5.1V	0.8V	4.8V	4.9V	5.2V	4.9V	5.2V	0V	5.3V	3.1V	2.7V	1.8V	5.2V		
23		24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
3.8V		5.2V	3.7V	2.4V	1.7V		0V				2.8V	0V	0.4V	0.4V	0V	5.2V		0V				

IC901

1	2	3	4	5	6	7	8	9
0V	0.1V	0.8V	2V	0V	2V	0.6V	0V	13V

IC902

1	2	3	4	5	6	7	8	9
0V	0V	0.6V	2V	0V	2V	0.7V	0V	12V

IC903,904

1	2	3	4	5	6	7	8	9
0V	0V	0.6V	2V	0V	2V	0.6V	0V	12V

IC905

1	2	3	4	5	6	7	8
0V	0V	0.4V	0.9V	0V	0V	0V	0V
16	15	14	13	12	11	10	9
5.5V	0V	0V	0V	0V	3.1V	2.7V	2.7V

IC906

1	2	3	4	5	6	7	8
5.3V	0V	0V	0V	0V	0V	5.5V	0V
	15	14	13	12	11	10	9
	4.8V	5.2V	4.9V	4.7V	0.8V	12V	0.4V

	1	2	3	4	5	6	7	8	9	10
0607	E			7.7V						6V
	C	7.7V	7.7V	0V	0V	-1.1V	-1.1V	-1.2V	-1.2V	-1.2V	-6.0V
	B	0V			7.7V					6V	
0606	E					0V					
	C	0V	0V	0V	0V	7.7V	7.7V	6.0V	6.0V	6.0V	6.0V
	B	3.8V	3.9V				0V				
0914	E					0V					
	C	10.5V	10.4V	10.2V	10.2V	10.4V			10.5V		
	B					0.4V					
	E					12.6V					
0915	C	10.5V	11.1V	1.1V	1.1V	1.1V	1.0V	1.1V	1.1V	1.1V	
	B	11.5V	11.3V	11.1V	11.1V	11.3V			11.4V		
0916	E					0.1V	0V	0.1V	0V	0.1V	
	C	3.7V			10.3V		10V	10V	5.2V	8.3V	8.2V
	B	0.5V			0V				0.1V	0.1V	
		1	2	3	4	5	6	7	8	9	10

	Q301	Q601	Q602	Q603	Q604	Q605	Q801	Q802	Q803	Q804	Q805
E	0V	0V	0V	0V	0V	0V	13.4V	13.4V	0.1V	0V	5.5V
C	0V	5.1V	0V	5.2V	5.2V	5.27V	13.3V	13.3V	0.2V	0.1V	12.1V
B	0V	0V	6.8V	0V	0V	0V	12.7V	12.7V	0V	5.1V	6V

	Q806	Q807	Q808	Q809	Q810	Q811	Q901	Q906	Q911	Q912	Q913
E	12.1V	11.9V	-0.1V	0V	0V	5.3V	0.7V	0V	12.6V	0V	0V
C	13.3V	12.8V	8.9V	11.8V	11.8V	12.8V	2.3V	0V	10.4V	0V	2.3V
B	12.8V	12.1V	-0.4V	0V	-0.1V	5.9V	0V	2.4V	0V	1.1V	0V

D610

1	2	3	4	5
5.1V	5.2V	4.8V	5.2V	5.2V

D611

1	2	3	4	5
5.1V	0.5V	4.7V	4.9V	0.6V

IC103

1	2	3	4	5	6	7	8	9	11	12
-6V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V
12	13	14	15	16	17	18	19	20	21	22
0V	0V	0V	0V	0V	0V	0V	0V	-1.3V	0V	-1.3V
23	24	25	26	27	28	29	30	31	32	33
-1.3V	6V	0V	0V	6V	6V	0V	0V	0V	0V	0V
34	35	36	37	38	39	40	41	42		
0V	0V	0V	0V	0V	0V	0V	0V	6V		

Measuring Condition
(1) Power Supply Voltage DC14V
(2) Measuring meter Digital Voltmeter
(3) Measuring point reference Between GND
(4) Measuring Conditions No Signal input

IC501

1	2	3	4	5	6	7	8
0V	0V	–	–	–	0V	-7.8V	0V
9	10	11	12	13	14	15	16
0V	7.7V	7.7V	0V	0V	0V	0V	7.8V

IC502

1	2	3	4	5	6	7	8
0V	0V	–	–	–	0V	-7.8V	0V
9	10	11	12	13	14	15	16
0V	7.7V	7.7V	0V	0V	0V	0V	7.8V

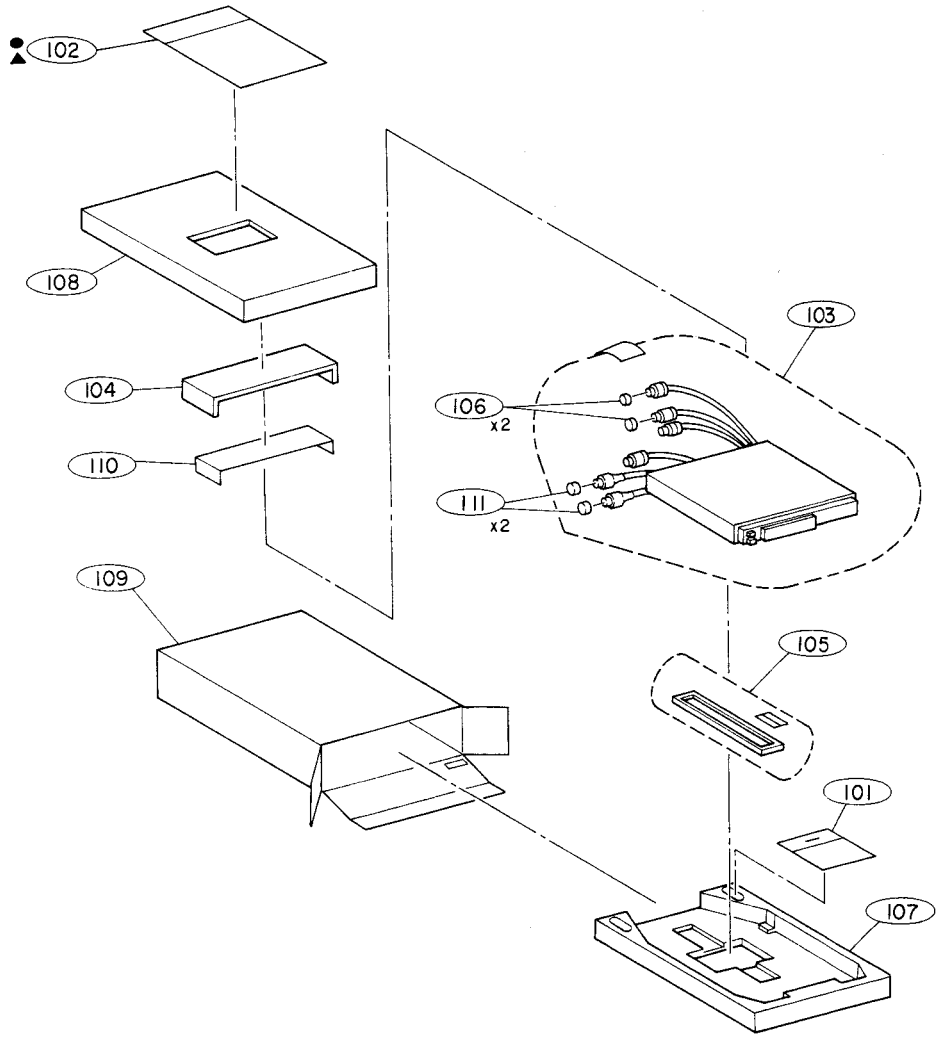
IC305

1	2	3	4	5	6	7	8
13.2V	6.6V	0V	6.6V	6.6V	6.5V	–	6.6V
9	10	11	12	13	14	15	
6.6V	6.6V	6.6V	6.6V	6.6V	6.6V	6.6V	

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

Packing Method View



Packing Assembly Parts List

Symbol No.	Part No.	Description
101	01V66500F33	Assembly, Kit Installation
● 102	01V73200F25	Assembly, Pamphlet
▲ 102	68P73333F43	Owner's, Manual
103	56B40990T22	Sack, Polyethylene
104	07B52108F04	Bracket "U" Mounting
105	33B72141F01	Face, Plate
106	15T44235F01	Cover, Connector
107	56D72165F01	Tray, Packing (Bottom)
108	56D72165F02	Tray, Packing (Top)
109	56S69254F41	Carton, Packing (Individual)
110	56A65131F01	Pad, Sheet
111	15T44235F03	Cover, Connector

Symbol No.	Part No.	Description

● : For North American Model (AO) only
▲: For General Export Model (GO) only
Others : Common

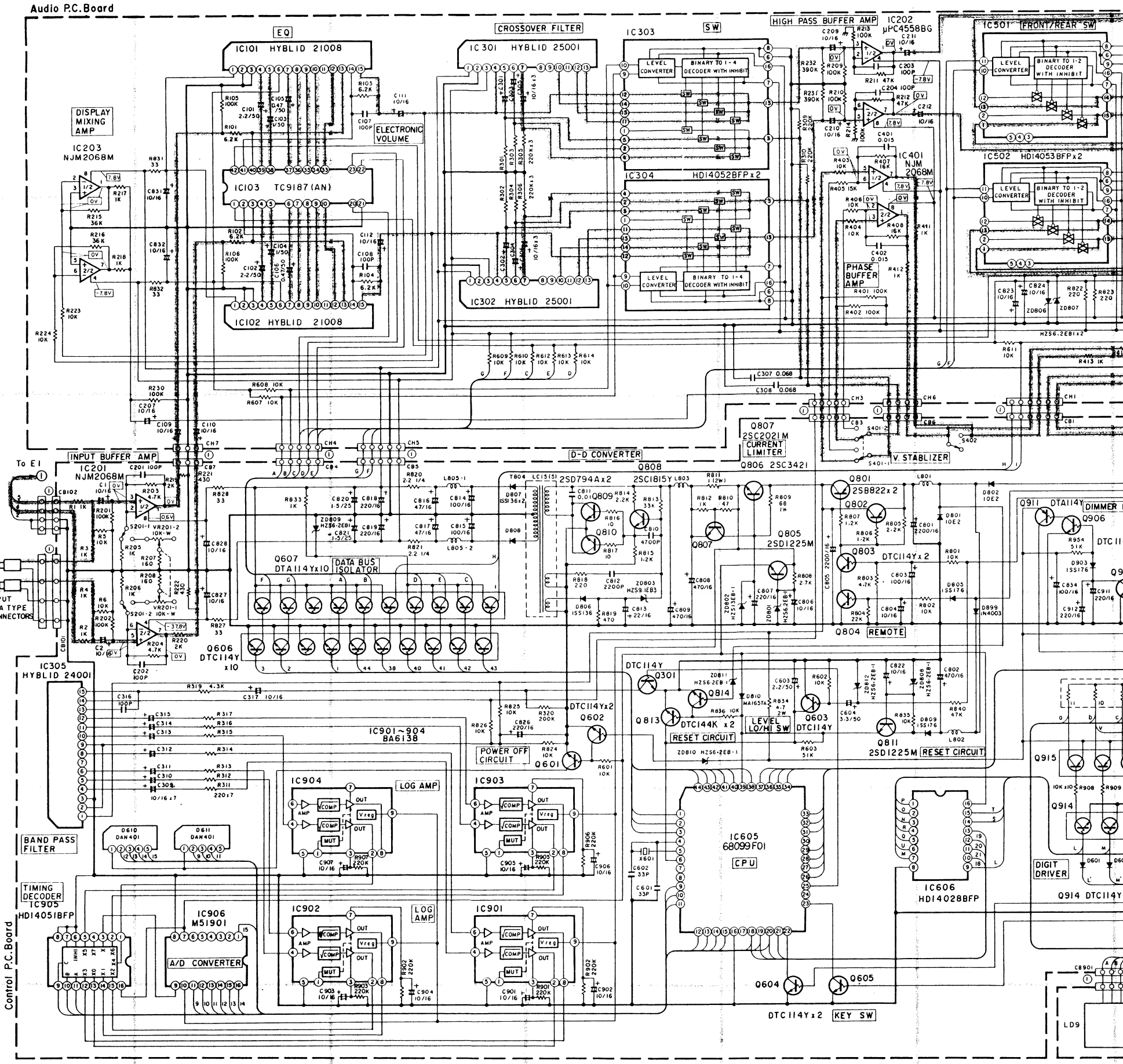
Cabinet Assembly Parts List

Symbol No.	Index	Part No.	Description
1	4-B	13C72161F01	Assembly, Nose Piece
4	1-E	15B71096F01	Cover, Top
5	5-D	27C71098F01	Chassis, Bottom
6		03S44205G48	Screw, Pan (M2.6 x 5)
7		03S44205G45	Screw, Countersink (M2.6 x 5)
8		03S44205G41	Screw, Pan (M2.6 x 4)
12	3-E	03S71031F02	Screw, Bind (M2.6 x 8)
13	3-E	15A66966F01	Cover, Shield
15	3-C	01V73200F20	Assembly, Front P.C. Board
16	4-C	84T71680F01	Panel, FPC
17	4-C	43A72158F01	Spacer, LED (B)
18	4-C	07A71033F01	Support, LED
19		04A66026F03	Washer (M3, 2)
20		03S44205G07	Screw, Pan (M2.6 x 5)
21	3-F	37T43734F01	Tube (30mm)
22	3-F	01V81300F86	Assembly, Reset P.C. Board

Symbol No.	Index	Part No.	Description

NOTE: The parts without part numbers are not supplied.

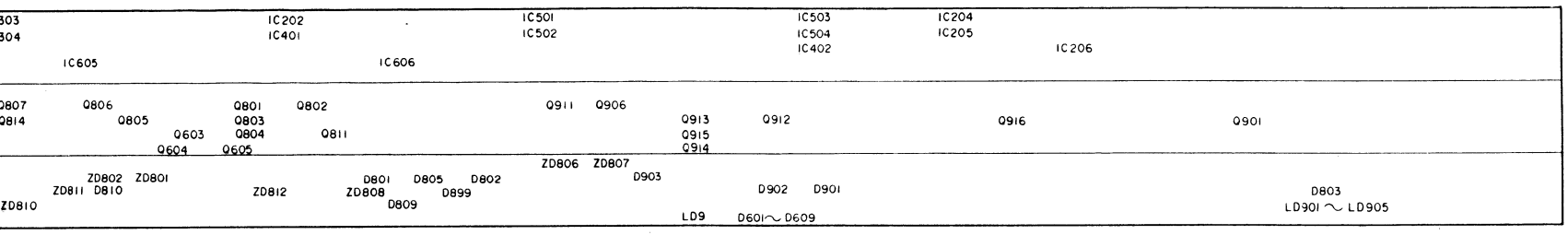
IC	IC203 IC201 IC305 IC905 IC906 IC101 IC103 IC102 IC904 IC902 IC301 IC302 IC903 IC901 IC303 IC304 IC605 IC202 IC401 IC606 IC501 IC502
Transistor (Q)	Q607 Q606 Q609 Q810 Q601 Q602 Q808 Q301 Q807 Q814 Q813 Q806 Q805 Q603 Q604 Q801 Q803 Q804 Q605 Q802 Q811 Q911 Q906
Diode (D,LD,ZD)	D610 D611 ZD809 D807 D808 D806 ZD803 ZD810 ZD802 ZD801 D810 ZD811 ZD812 ZD808 D809 D801 D805 D802 D899 D903 ZD806 ZD807

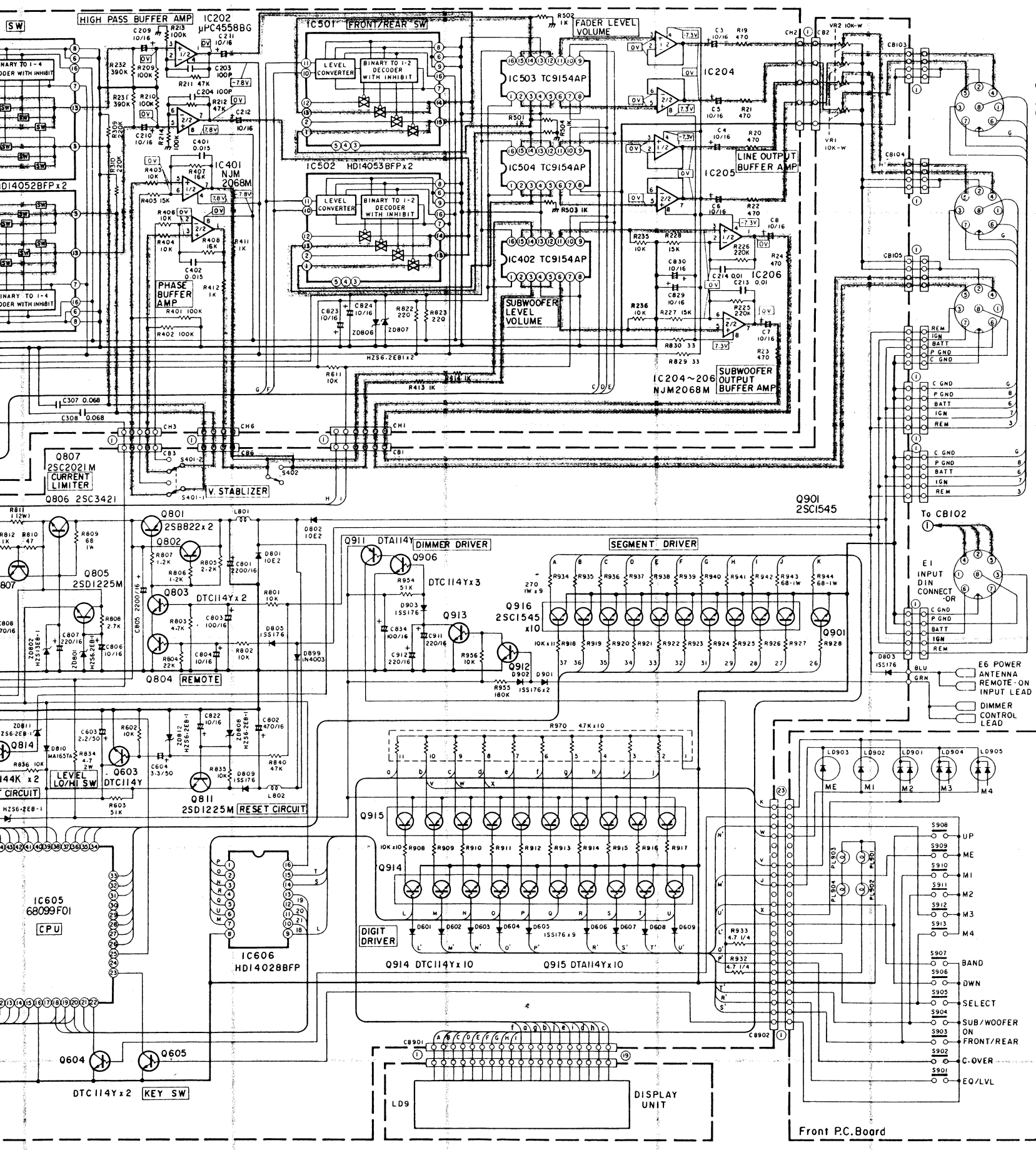


For General Foreign model only (GO)

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$





IC101,102

1	2	3	4	5	6	7	8	9	10
6.7V	0V	0V	0V	0V	-6.7V	0V	0V	0V	0

IC301,302

1	2	3	4	5	6	7	8	9	10
7.7V	0V	-7.8V	0V	0V	0V	0V	—	—	0

IC303,304

1	2	3	4	5	6	7	8
7.7V	0V	0V	0V	0V	0V	-7.8V	0V
16	15	14	13	12	11	10	9
7.8V	0V	0V	0V	0V	0V	-1.1V	-1.1V

IC402

1	2	3	4	5	6	7	8
-6V	0V	0V	0V	0V	0V	-6V	0V
16	15	14	13	12	11	10	9
0V	0V	0V	0V	0V	0V	-1.2V	-1.2V

IC605

1	2	3	4	5	6	7	8	9	10	11	12
0V	3.9V	3.8V	2.5V	2.6V	5.2V	0V	5.1V	0.8V	4.8V	4.9V	5.1V
23		24	25	26	27	28	29	30	31	32	33
3.8V		5.2V	3.7V	2.4V	1.7V		0V				2.8V

IC901

1	2	3	4	5	6	7	8	9
0V	0.1V	0.8V	2V	0V	2V	0.6V	0V	13V

IC902

1	2	3	4	5	6	7	8	9
0V	0V	0.6V	2V	0V	2V	0.7V	0V	12V

IC903,904

1	2	3	4	5	6	7	8	9
0V	0V	0.6V	2V	0V	2V	0.6V	0V	12V

IC905

1	2	3	4	5	6	7	8
0V	0V	0.4V	0.9V	0V	0V	0V	0V
16	15	14	13	12	11	10	9
5.5V	0V	0V	0V	0V	3.1V	2.7V	2.7V

IC906

1	2	3	4	5	6	7	8
5.3V	0V	0V	0V	0V	0V	5.5V	0V
	15	14	13	12	11	10	9
	4.8V	5.2V	4.9V	4.7V	0.8V	12V	0.4V

/	Q301	Q601	Q602	Q603	Q604	Q605	Q801
E	0V	0V	0V	0V	0V	0V	13.4V
C	0V	5.1V	0V	5.2V	5.2V	5.27V	13.3V
B	0V	0V	6.8V	0V	0V	0V	12.7V

/	Q806	Q807	Q808	Q809	Q810	Q811	Q901
E	12.1V	11.9V	-0.1V	0V	0V	5.3V	0.7V
C	13.3V	12.8V	8.9V	11.8V	11.8V	12.8V	2.3V
B	12.8V	12.1V	-0.4V	0V	-0.1V	5.9V	0V

IC103

1	2	3	4
-6V	0V	0V	0
12	13	14	1
0V	0V	0V	0
23	24	25	2
-1.3V	6V	0V	0
34	35	36	3
0V	0V	0V	0

IC501

1	2	3	4
0V	0V	—	—
9	10	11	12
0V	7.7V	7.7V	0V

IC502

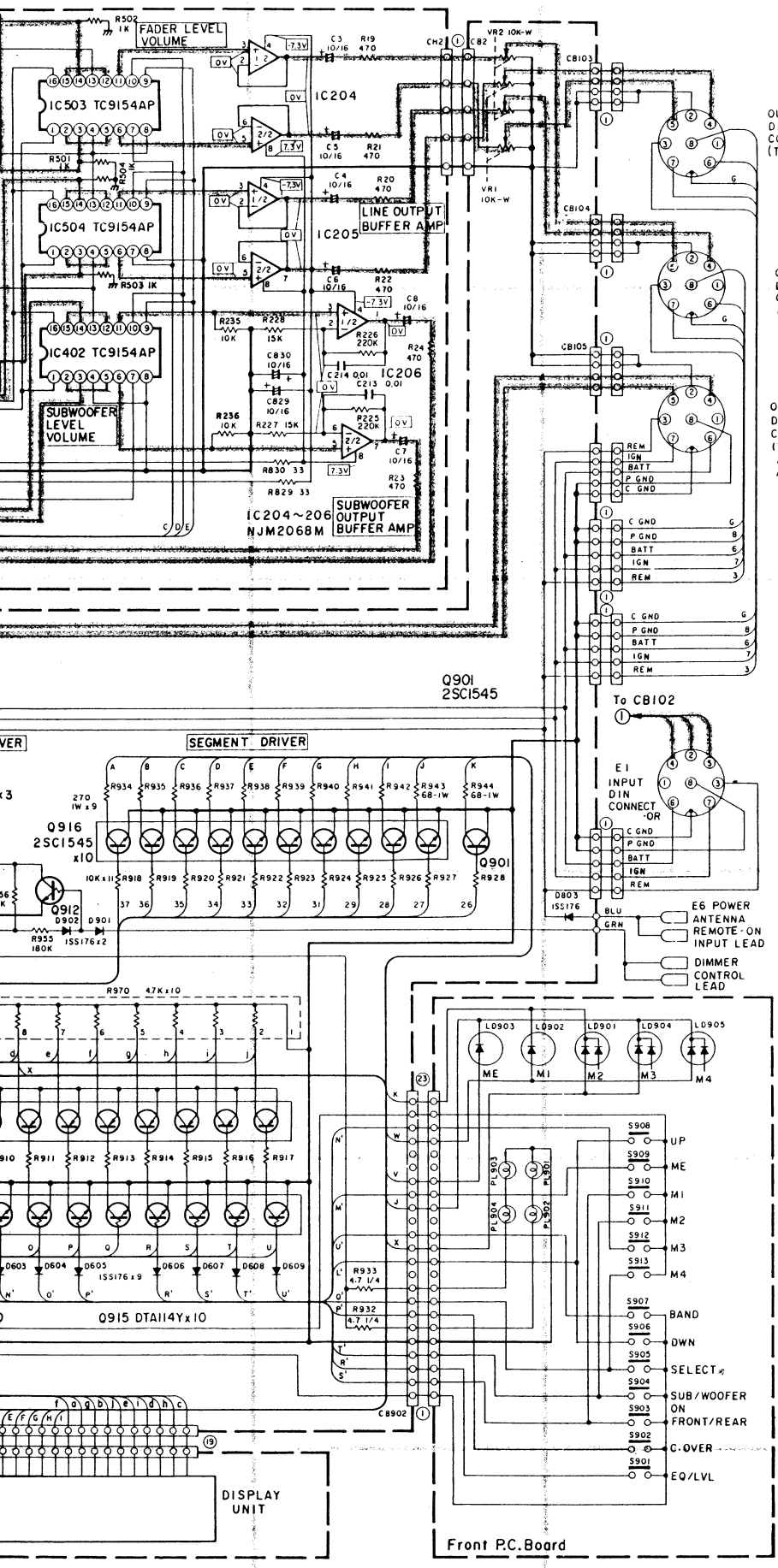
1	2	3	4
0V	0V	—	—
9	10	11	12
0V	7.7V	7.7V	0V

IC305

1	2	3	4
13.2V	6.6V	0V	6.6
9	10	11	12
6.6V	6.6V	6.6V	6.6

Measuring Condition
(1) Power Supply Voltage DC14V
(2) Measuring meter Digital Voltmeter
(3) Measuring point reference Between GND
(4) Measuring Conditions No Signal input

	IC503 IC504 IC402	IC204 IC205	IC206
13 15 14 Q912		Q916	Q901
	D902 D901		D803 LD901 ~ LD905
09 D601 ~ D609			



IC101,102

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
6.7V	0V	0V	0V	0V	-6.7V	0V	0V	0V	0V	—	0V	0V	0V	0V

IC301,302

1	2	3	4	5	6	7	8	9	10	11	12	13
7.7V	0V	-7.8V	0V	0V	0V	0V	—	—	0V	—	0V	0V

IC303,304

1	2	3	4	5	6	7	8
7.7V	0V	0V	0V	0V	0V	-7.8V	0V
16	15	14	13	12	11	10	9
7.8V	0V	0V	0V	0V	0V	-1.1V	-1.1V

IC503,504

1	2	3	4	5	6	7	8
-6V	0V	0V	0V	0V	0V	-1.2V	0V
16	15	14	13	12	11	10	9
6V	0V	0V	0V	0V	0V	-1.2V	-1.2V

IC402

1	2	3	4	5	6	7	8
-6V	0V	0V	0V	0V	0V	-6V	0V
16	15	14	13	12	11	10	9
0V	0V	0V	0V	0V	0V	-1.2V	-1.2V

IC606

1	2	3	4	5	6	7	8
0.4V	0V	0.4V	0.4V	0.4V	0.4V	0.4V	0V
16	15	14	13	12	11	10	9
5.5V	0.4V	0.4V	2.7V	2.7V	1.8V	3.1V	0.4V

IC605

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
0V	3.9V	3.8V	2.5V	2.6V	5.2V	0V	5.1V	0.8V	4.8V	4.9V	5.2V	4.9V	5.2V	0V	5.3V	3.1V	2.7V	1.8V	5.2V		
23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
3.8V	5.2V	3.7V	2.4V	1.7V	0V					2.8V	0V	0.4V	0.4V	0V	5.2V	0V					

IC901

1	2	3	4	5	6	7	8	9
0V	0.1V	0.8V	2V	0V	2V	0.6V	0V	13V

IC902

1	2	3	4	5	6	7	8	9
0V	0V	0.6V	2V	0V	2V	0.7V	0V	12V

IC903,904

1	2	3	4	5	6	7	8	9
0V	0V	0.6V	2V	0V	2V	0.6V	0V	12V

IC905

1	2	3	4	5	6	7	8
0V	0V	0.4V	0.9V	0V	0V	0V	0V
16	15	14	13	12	11	10	9
5.5V	0V	0V	0V	0V	3.1V	2.7V	2.7V

IC906

1	2	3	4	5	6	7	8
5.3V	0V	0V	0V	0V	0V	5.5V	0V
	15	14	13	12	11	10	9
	4.8V	5.2V	4.9V	4.7V	0.8V	12V	0.4V

		1	2	3	4	5	6	7	8	9	10
Q607	E	7.7V						6V			
	C	7.7V	7.7V	0V	0V	-1.1V	-1.1V	-1.2V	-1.2V	-1.2V	-6.0V
	B	0V	7.7V					6V			
Q606	E	0V									
	C	0V	0V	0V	0V	7.7V	7.7V	6.0V	6.0V	6.0V	6.0V
	B	3.8V	3.9V	0V							
Q914	E	0V									
	C	10.5V	10.4V	10.2V	10.2V	10.4V	10.5V				
	B	0.4V									
Q915	E	12.6V									
	C	10.5V	11.1V	1.1V	1.1V	1.1V	1.1V	1.0V	1.1V	1.1V	1.1V
	B	11.5V	11.3V	11.1V	11.1V	11.3V	11.4V				
Q916	E	0V				0.1V	0V	0.1V	0.1V	0V	
	C	3.7V	10.3V			10V	10V	5.2V	8.3V	8.2V	
	B	0.5V	0V					0.1V	0.1V	0V	
		1	2	3	4	5	6	7	8	9	10

	Q301	Q601	Q602	Q603	Q604	Q605	Q801	Q802	Q803	Q804	Q805
E	0V	0V	0V	0V	0V	0V	13.4V	13.4V	0.1V	0V	5.5V
C	0V	5.1V	0V	5.2V	5.2V	5.27V	13.3V	13.3V	0.2V	0.1V	12.1V
B	0V	0V	6.8V	0V	0V	0V	12.7V	12.7V	0V	5.1V	6V

	Q806	Q807	Q808	Q809	Q810	Q811	Q901	Q906	Q911	Q912	Q913
E	12.1V	11.9V	-0.1V	0V	0V	5.3V	0.7V	0V	12.6V	0V	0V
C	13.3V	12.8V	8.9V	11.8V	11.8V	12.8V	2.3V	0V	10.4V	0V	2.3V
B	12.8V	12.1V	-0.4V	0V	-0.1V	5.9V	0V	2.4V	0V	1.1V	0V

D610

1	2	3	4	5
5.1V	5.2V	4.8V	5.2V	5.2V

D611

1	2	3	4	5
5.1V	0.5V	4.7V	4.9V	0.6V

IC103

1	2	3	4	5	6	7	8	9	11	12
-6V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V
12	13	14	15	16	17	18	19	20	21	22
0V	0V	0V	0V	0V	0V	0V	0V	-1.3V	0V	-1.3V
23	24	25	26	27	28	29	30	31	32	33
-1.3V	6V	0V	0V	6V	6V	0V	0V	0V	0V	0V
34	35	36	37	38	39	40	41	42		
0V	0V	0V	0V	0V	0V	0V	0V	6V		

Measuring Condition
(1) Power Supply Voltage DC14V
(2) Measuring meter Digital Voltmeter
(3) Measuring point reference Between GND
(4) Measuring Conditions No Signal input

IC501

1	2	3	4	5	6	7	8
0V	0V	—	—	—	0V	-7.8V	0V
9	10	11	12	13	14	15	16
0V	7.7V	7.7V	0V	0V	0V	0V	7.8V

IC502

1	2	3	4	5	6	7	8
0V	0V	—	—	—	0V	-7.8V	0V
9	10	11	12	13	14	15	16
0V	7.7V	7.7V	0V	0V	0V	0V	7.8V

IC305

1	2	3	4	5	6	7	8
13.2V	6.6V	0V	6.6V	6.6V	6.6V	—	6.6V
9	10	11	12	13	14	15	
6.6V	6.6V	6.6V	6.6V	6.6V	6.6V	6.6V	

IC	IC203 IC201 IC305 IC905 IC906 IC101 IC103 IC102 IC904 IC902 IC301 IC302 IC903 IC901 IC303 IC304 IC605 IC202 IC401 IC606 IC501 IC502
Transistor (Q)	Q607 Q606 Q809 Q810 Q601 Q602 Q808 Q301 Q813 Q807 Q814 Q806 Q805 Q603 Q604 Q801 Q803 Q804 Q605 Q802 Q811 Q91
Diode (D,LD,ZD)	ZD809 D610 D611 D807 D808 D806 ZD803 ZD810 ZD802 ZD801 ZD811 D810 ZD812 D801 D805 D802 ZD808 D809 D899 ZD80

Audio P.C.Board

EQ

IC101 HYBLID 21008

IC103 TC9187(AN)

IC102 HYBLID 21008

ELECTRONIC VOLUME

CROSSOVER FILTER

IC301 HYBLID 25001

IC302 HYBLID 25001

IC303 SW

LEVEL CONVERTER

BINARY TO 1-4 DECODER WITH INHIBIT

IC304 HD14052BFPx2

HIGH PASS BUFFER AMP

IC202 μPC4558BG

IC401 NJM2068M

PHASE BUFFER AMP

IC501

IC502 HD140

DISPLAY MIXING AMP

IC203 NJM2068M

INPUT BUFFER AMP

IC201 NJM2068M

To E1

E5 INPUT RCA TYPE CONNECTORS

D-D CONVERTER

Q807 2SC2021M CURRENT LIMITER

Q806 2SC3421

Q808

V. STABLIZER

Q607 DTA114Yx10 DATA BUS ISOLATOR

Q606 DTC114Y x10

2SD794Ax2

2SC1815

Q809

Q810

Q805 2SD1225M

Q807

Q801 2SB822x2

Q802

Q803 DTC114Yx2

Q804 REMOTE

IC305 HYBLID 24001

IC901~904 BA6138

POWER OFF CIRCUIT

DTC114Yx2 Q602

Q601

DTC114Y Q301

Q814

Q813 DTC144K x2 RESET CIRCUIT

LEVEL LO/HI SW

Q603 DTC114Y

Q811 2SD1225M RESET CIRCUIT

IC605 68099F01 CPU

IC606 HD140288FP

DIGIT DRIVER

Q604 Q605 DTC114Y x2 KEY SW

BAND PASS FILTER

TIMING DECODER IC905 HD14051BFP

IC906 M51901 A/D CONVERTER

IC904 LOG AMP

IC903

IC902 LOG AMP

IC901

Control P.C.Board

IC303
IC304
IC202
IC401
IC501
IC502
IC503
IC504
IC402
IC204
IC205
IC605
IC606
IC206

Q809 Q808 Q807 Q806 Q801 Q802 Q911 Q906
Q810 Q301 Q814 Q805 Q803 Q913 Q912 Q916 Q901
Q602 Q813 Q603 Q804 Q811 Q915 Q914
Q604 Q605

ZD802 ZD801 ZD806 ZD807
ZD803 ZD811 D810 D801 D805 D802 D903
ZD810 ZD812 ZD808 D899 D902 D901
D809
LD9 D601~D609 D803
LD901~LD905

IC303 SW
HIGH PASS BUFFER AMP
IC501 FRONT/REAR SW
FADER LEVEL VOLUME
LEVEL CONVERTER
BINARY TO 1-4 DECODER WITH INHIBIT
BINARY TO 1-2 DECODER WITH INHIBIT
IC202 μPC4558BG
IC503 TC9154 P
IC504 TC9154 P
IC204
IC205
LINE OUTPUT BUFFER AMP
IC304 HD14052BFPx2
HD14053BFPx2
IC502
IC402 TC9154 P
IC401 NJM2068M
PHASE BUFFER AMP
SUBWOOFER LEVEL VOLUME
IC206
IC204~206 NJM2068M
SUBWOOFER OUTPUT BUFFER AMP
HZS6.2EB1x2
CH2 CB2 VR2 10K-W
VR1 10K-W
CB103 CB104 CB105
CH3 CH6 CH1 CB1 CB3 CB6
S401-2 S402 S401-1
V. STABLIZER
CURRENT LIMITER
Q807 2SC2021M
Q806 2SC3421
Q808
Q801 2SB822x2
Q802
Q803 DTC114Yx2
Q804 REMOTE
Q805 2SD1225M
Q807
Q911 DTA114Y DIMMER DRIVER
Q906
SEGMENT DRIVER
Q916 2SC1545 x10
Q913
Q912
Q901 2SC1545
To CB102
E1 INPUT DIN CONNECT-OR
E2 OUTPUT DIN CONNECTOR (To FRONT SPEAKER AMP)
E3 OUTPUT DIN CONNECTOR (To REAR SPEAKER AMP)
E4 OUTPUT DIN CONNECTOR (To SUB /WOOFER AMP)
E6 POWER ANTENNA REMOTO-ON INPUT LEAD
DIMMER CONTROL LEAD
DTC114Y Q301
Q814
Q813
DTC144K x2
RESET CIRCUIT
LEVEL LO/HI SW
Q603 DTC114Y
Q811 2SD1225M RESET CIRCUIT
IC605 68099F01
CPU
IC606 HD14028BFP
Q604 Q605
DTC114Yx2 KEY SW
Q915
Q914
DIGIT DRIVER
Q914 DTC114Yx10
Q915 DTA114Yx10
LD903 LD902 LD901 LD904 LD905
ME MI M2 M3 M4
S908 UP
S909 ME
S910 MI
S911 M2
S912 M3
S913 M4
S907 BAND
S906 DWN
S905 SELECT
S904 SUB/WOOFER ON
S903 FRONT/REAR
S902 C.OVER
S901 EQ/LVL
CB901 CB902
LD9 DISPLAY UNIT
Front P.C.Board

IC101,102

1	2	3	4	5	6
6.7V	0V	0V	0V	0V	-6.7

IC301,302

1	2	3	4	5	6
7.7V	0V	-7.8V	0V	0V	0

IC303,304

1	2	3	4	5	6
7.7V	0V	0V	0V	0V	0
16	15	14	13	12	11
7.8V	0V	0V	0V	0V	0

IC402

1	2	3	4	5	6
-6.0V	0V	0V	0V	0V	0
16	15	14	13	12	11
0V	0V	0V	0V	0V	0

IC605

1	2	3	4	5	6	7
0V	3.9V	3.8V	2.5V	2.6V	5.2V	0V
23		24	25	26	27	28
3.8V		5.2V	3.7V	2.4V	1.7V	

IC901

1	2	3	4	5	6
0V	0.1V	0.8V	2.0V	0V	2.0

IC902

1	2	3	4	5	6
0V	0V	0.6V	2.0V	0V	2.0

IC903,904

1	2	3	4	5	6
0V	0V	0.6V	2.0V	0V	2.0

IC905

1	2	3	4	5	6
0V	0V	0.4V	0.9V	0V	0V
16	15	14	13	12	11
5.5V	0V	0V	0V	0V	3.1V

IC906

1	2	3	4	5	6
5.3V	0V	0V	0V	0V	0V
	15	14	13	12	11
	4.8V	5.2V	4.9V	4.7V	0.8V

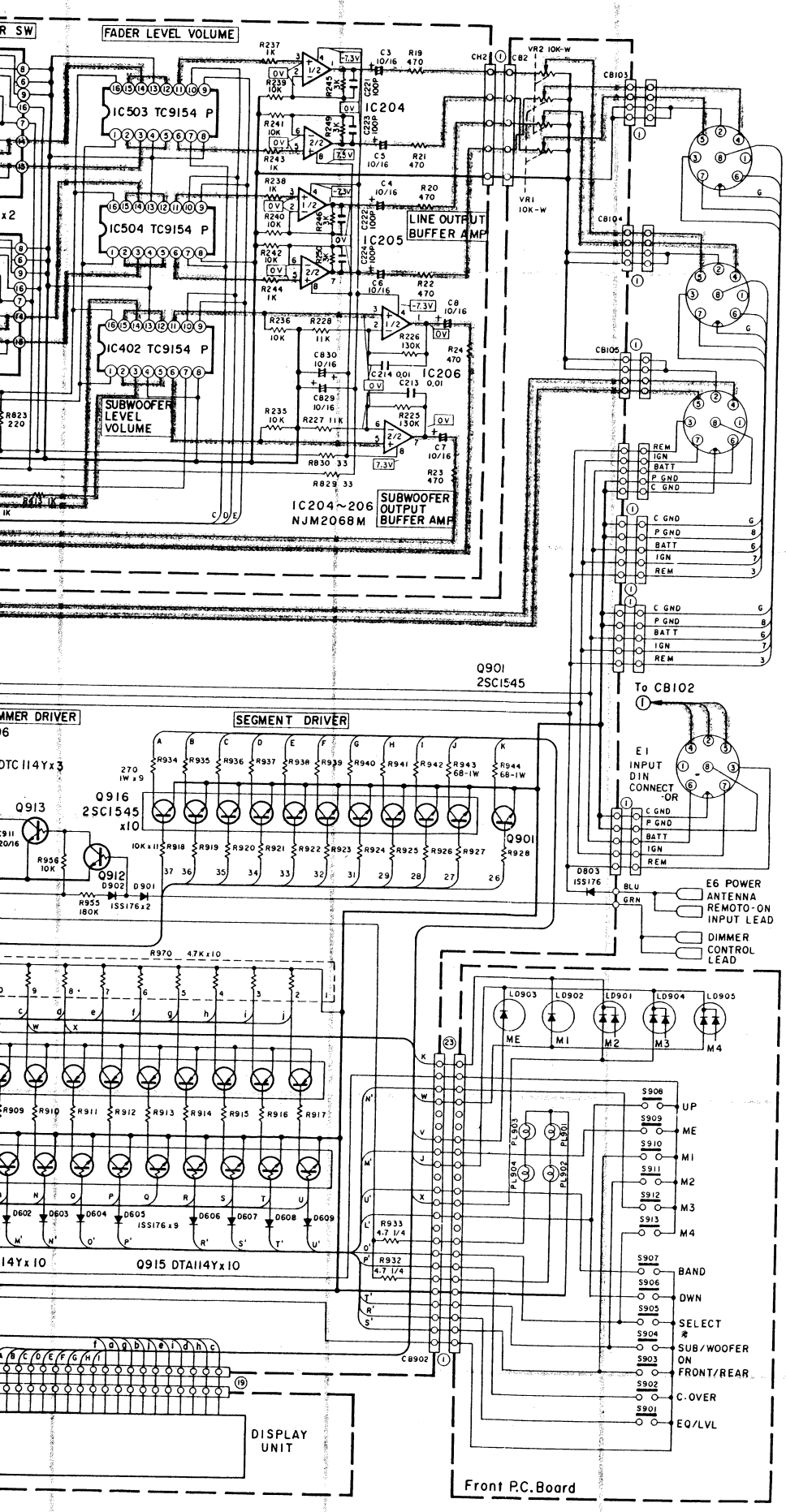
	Q301	Q601	Q602	Q603	Q
E	0V	0V	0V	0V	
C	0V	5.1V	0V	5.2V	5
B	0V	0V	6.8V	0V	

	Q806	Q807	Q808	Q809	Q
E	12.1V	11.9V	-0.1V	0V	
C	13.3V	12.8V	8.9V	11.8V	1
B	12.8V	12.1V	-0.4V	0V	-0

Measuring Condition
(1) Power Supply Voltage DC14V
(2) Measuring meter Digital Voltmeter
(3) Measuring point reference Between GND
(4) Measuring Conditions No Signal input

NOTES:
1. All resistance values are in ohms.
2. All capacitance values are in micro

														IC503 IC504 IC402			IC204 IC205				IC206			
06																								
												Q913 Q915 Q914			Q912				Q916				Q901	
07																								
										D903						D902	D901							
													LD9		D601~D609								D803 LD901 ~ LD905	



IC101,102

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
6.7V	0V	0V	0V	0V	-6.7V	0V	0V	0V	0V	—	0V	0V	0V	0V

IC301,302

1	2	3	4	5	6	7	8	9	10	11	12	13
7.7V	0V	-7.8V	0V	0V	0V	0V	—	—	0V	—	0V	0V

IC303,304

1	2	3	4	5	6	7	8
7.7V	0V	0V	0V	0V	0V	-7.8V	0V
16	15	14	13	12	11	10	9
7.8V	0V	0V	0V	0V	0V	-1.1V	-1.1V

IC503, 504

1	2	3	4	5	6	7	8
-6.0V	0V	0V	0V	0V	0V	-1.2V	0V
16	15	14	13	12	11	10	9
6.0V	0V	0V	0V	0V	0V	-1.2V	-1.2V

IC402

1	2	3	4	5	6	7	8
-6.0V	0V	0V	0V	0V	0V	-6.0V	0V
16	15	14	13	12	11	10	9
0V	0V	0V	0V	0V	0V	-1.2V	-1.2V

IC606

1	2	3	4	5	6	7	8
0.4V	0V	0.4V	0.4V	0.4V	0.4V	0.4V	0V
16	15	14	13	12	11	10	9
5.5V	0.4V	0.4V	2.7V	2.7V	1.8V	3.1V	0.4V

IC605

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
0V	3.9V	3.8V	2.5V	2.6V	5.2V	0V	5.1V	0.8V	4.8V	4.9V	5.2V	4.9V	5.2V	0V	5.3V	3.1V	2.7V	1.8V	5.2V		
23		24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
3.8V	5.2V	3.7V	2.4V	1.7V	0V					2.8V	0V	0.4V	0.4V	0V	5.2V	0V						

IC901

1	2	3	4	5	6	7	8	9
0V	0.1V	0.8V	2.0V	0V	2.0V	0.6V	0V	13.0V

IC902

1	2	3	4	5	6	7	8	9
0V	0V	0.6V	2.0V	0V	2.0V	0.7V	0V	12.0V

IC903,904

1	2	3	4	5	6	7	8	9
0V	0V	0.6V	2.0V	0V	2.0V	0.6V	0V	12.0V

IC905

1	2	3	4	5	6	7	8
0V	0V	0.4V	0.9V	0V	0V	0V	0V
16	15	14	13	12	11	10	9
5.5V	0V	0V	0V	0V	3.1V	2.7V	2.7V

IC906

1	2	3	4	5	6	7	8
5.3V	0V	0V	0V	0V	0V	5.5V	0V
	15	14	13	12	11	10	9
	4.8V	5.2V	4.9V	4.7V	0.8V	12.0V	0.4V

		1	2	3	4	5	6	7	8	9	10
Q607	E	7.7V						6.0V			
	C	7.7V	7.7V	0V	0V	-1.1V	-1.1V	-1.2V	-1.2V	-1.2V	-6.0V
	B	0V			7.7V			6.0V			
Q606	E	0V									
	C	0V	0V	0V	0V	7.7V	7.7V	6.0V	6.0V	6.0V	6.0V
	B	3.8V	3.9V	0V							
Q914	E	0V									
	C	10.5V	10.4V	10.2V	10.2V	10.4V	10.5V				
	B	0.4V									
Q915	E	12.6V									
	C	10.5V	11.1V	1.1V	1.1V	1.1V	1.1V	1.0V	1.1V	1.1V	1.1V
	B	11.5V	11.3V	11.1V	11.1V	11.3V	11.4V				
Q916	E	0V				0.1V	0V	0.1V	0.1V	0V	
	C	3.7V	10.3V			10V	10V	5.2V	8.3V	8.2V	
	B	0.5V	0V					0.1V	0.1V	0V	
		1	2	3	4	5	6	7	8	9	10

	Q301	Q601	Q602	Q603	Q604	Q605	Q801	Q802	Q803	Q804	Q805
E	0V	0V	0V	0V	0V	0V	13.4V	13.4V	0.1V	0V	5.5V
C	0V	5.1V	0V	5.2V	5.2V	5.27V	13.3V	13.3V	0.2V	0.1V	12.1V
B	0V	0V	6.8V	0V	0V	0V	12.7V	12.7V	0V	5.1V	6.0V

	Q806	Q807	Q808	Q809	Q810	Q811	Q901	Q906	Q911	Q912	Q913
E	12.1V	11.9V	-0.1V	0V	0V	5.3V	0.7V	0V	12.6V	0V	0V
C	13.3V	12.8V	8.9V	11.8V	11.8V	12.8V	2.3V	0V	10.4V	0V	2.3V
B	12.8V	12.1V	-0.4V	0V	-0.1V	5.9V	0V	2.4V	0V	1.1V	0V

D610

1	2	3	4	5
5.1V	5.2V	4.8V	5.2V	5.2V

D611

1	2	3	4	5
5.1V	0.5V	4.7V	4.9V	0.6V

IC103

1	2	3	4	5	6	7	8	9	11	12
-6V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V
12	13	14	15	16	17	18	19	20	21	22
0V	0V	0V	0V	0V	0V	0V	0V	-1.3V	0V	-1.3V
23	24	25	26	27	28	29	30	31	32	33
-1.3V	6V	0V	0V	6V	6V	0V	0V	0V	0V	0V
34	35	36	37	38	39	40	41	42		
0V	0V	0V	0V	0V	0V	0V	0V	6V		

Measuring Condition
(1) Power Supply Voltage DC14V
(2) Measuring meter Digital Voltmeter
(3) Measuring point reference Between GND
(4) Measuring Conditions No Signal input

IC501

1	2	3	4	5	6	7	8
0V	0V	—	—	—	0V	-7.8V	0V
9	10	11	12	13	14	15	16
0V	7.7V	7.7V	0V	0V	0V	0V	7.8V

IC502

1	2	3	4	5	6	7	8
0V	0V	—	—	—	0V	-7.8V	0V
9	10	11	12	13	14	15	16
0V	7.7V	7.7V	0V	0V	0V	0V	7.8V

IC305

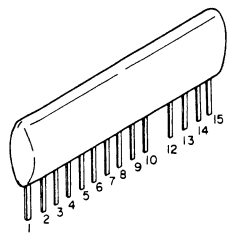
1	2	3	4	5	6	7	8
13.2V	6.6V	0V	6.6V	6.6V	6.6V	—	6.6V
9	10	11	12	13	14	15	
6.6V	6.6V	6.6V	6.6V	6.6V	6.6V	6.6V	

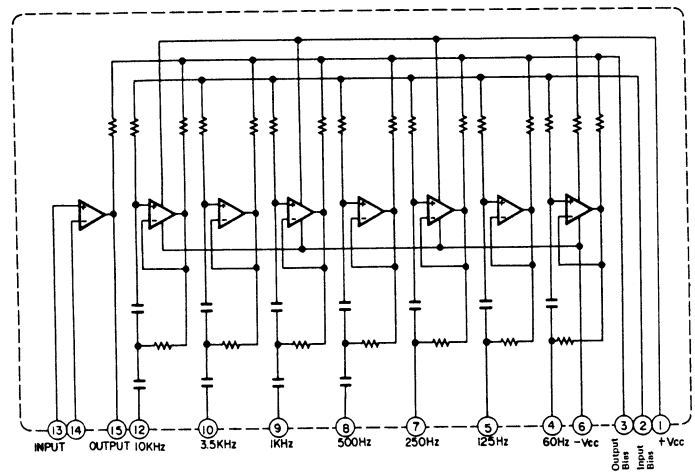
NOTES:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$

For North American model only (AO)

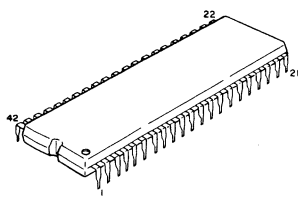
Semi-Conductor Lead Identifications

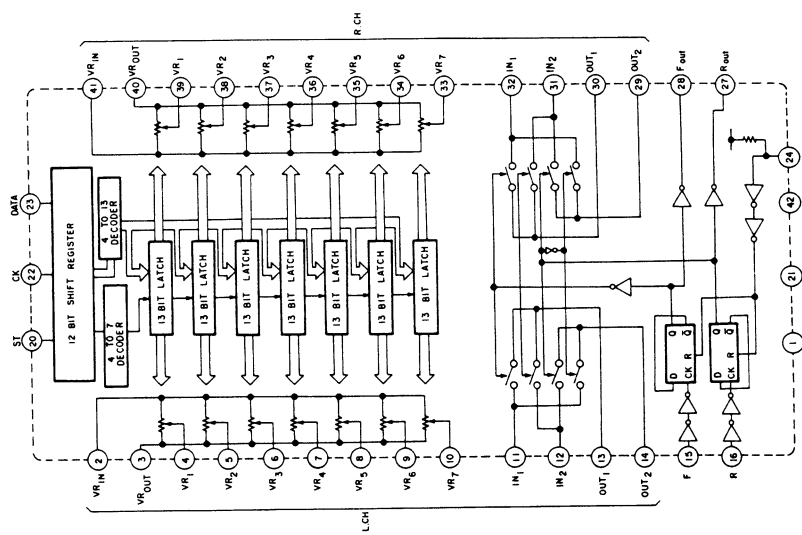
THG21008: IC101, 102



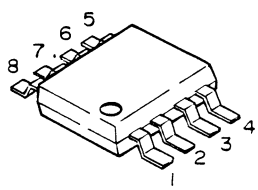


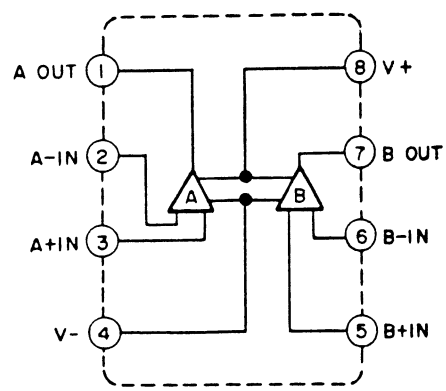
TC9187: IC103



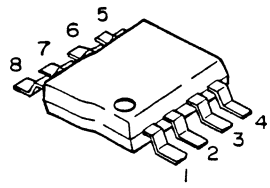


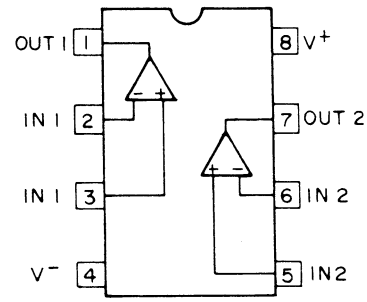
NJM2068M: IC201, 203, 204, 205, 206, 401



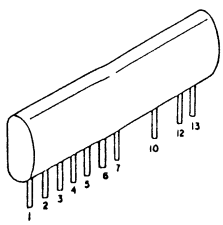


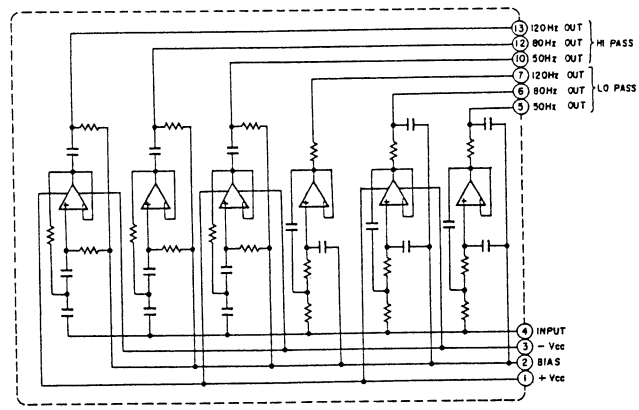
μPC4558BG : IC202



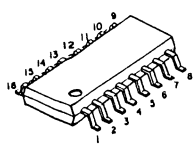


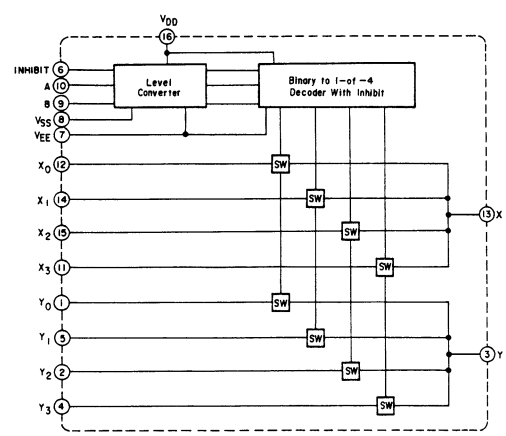
THG25001: IC301, 302



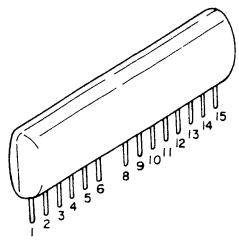


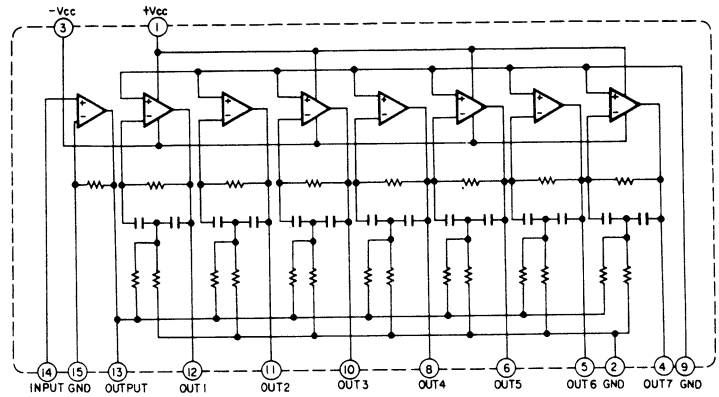
HD14052BFP
μPD4052BG : IC303, 304



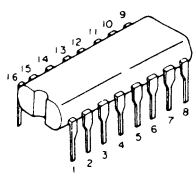


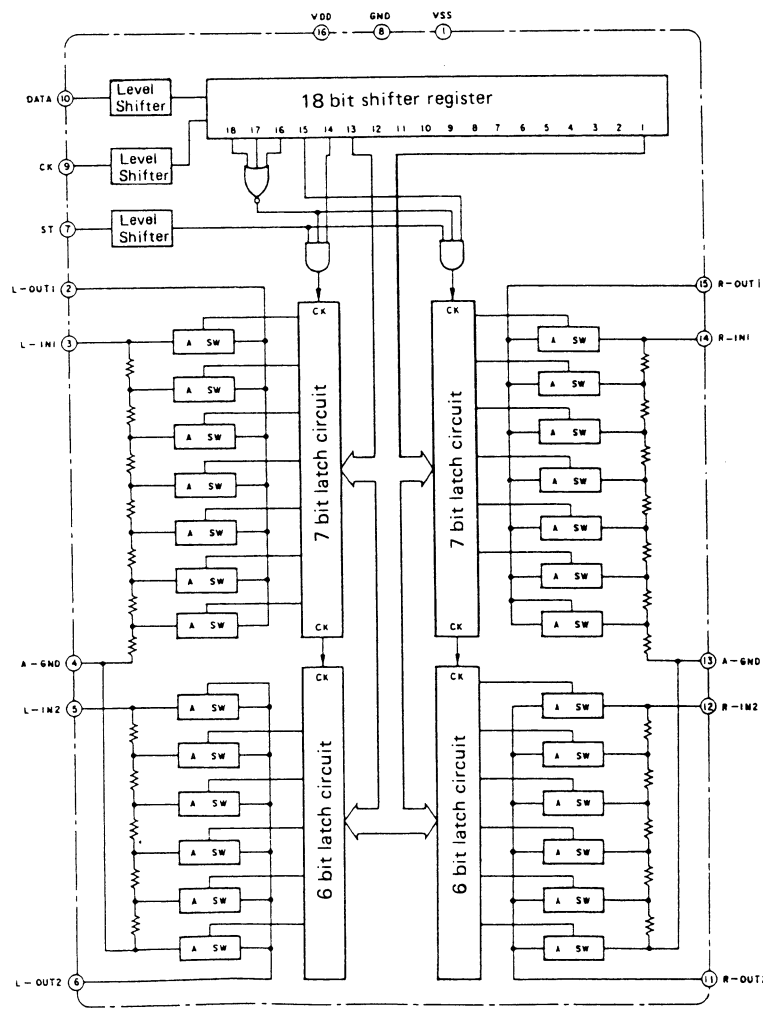
HIC24001: IC305



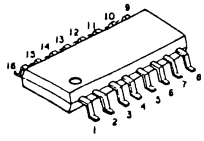


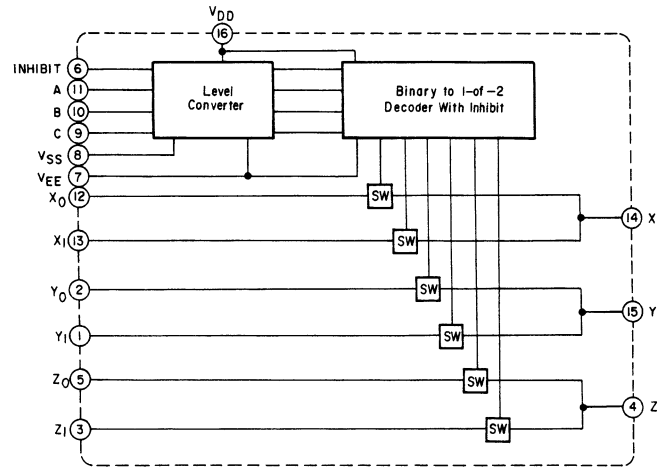
TC9154P: IC402, 503, 504



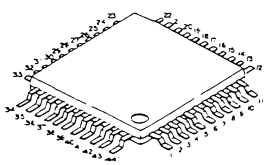


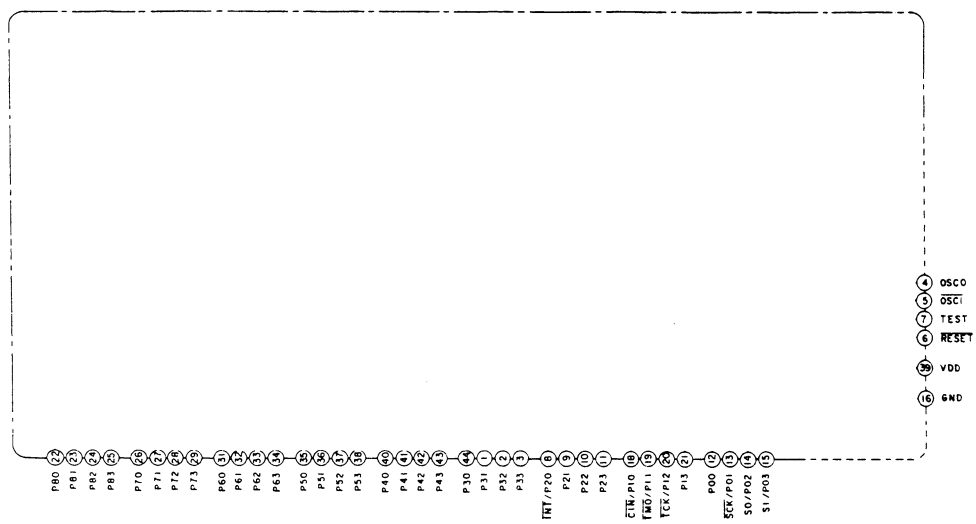
μPD4053BG
HD14052BFP: IC501, 502



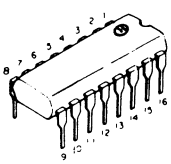


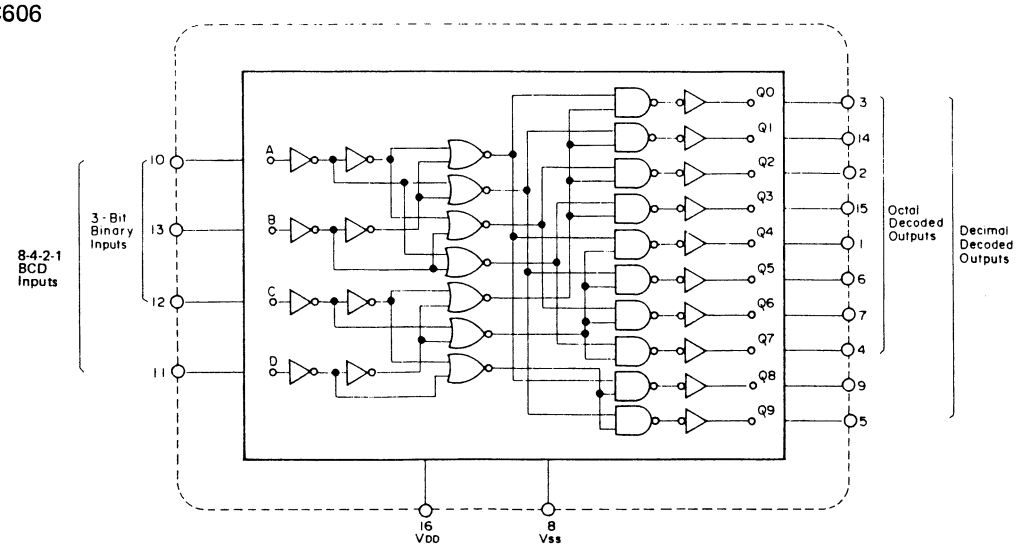
68099F01: IC605



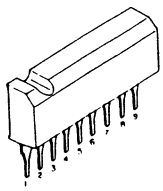


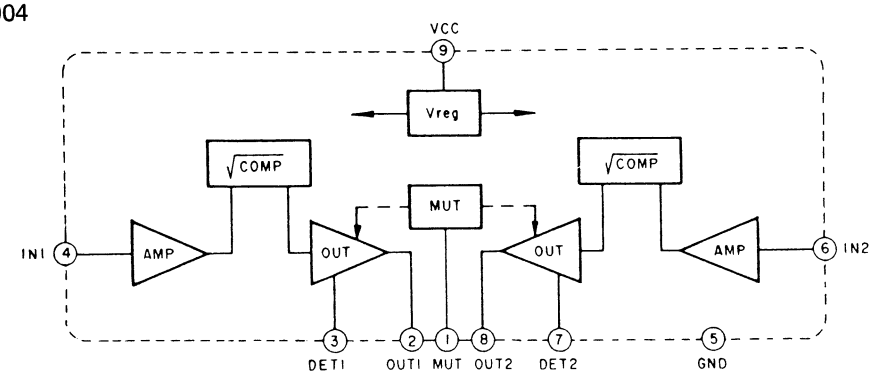
μPD4028BG
HD14028BFP: IC606



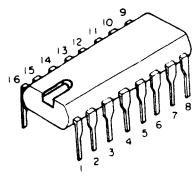


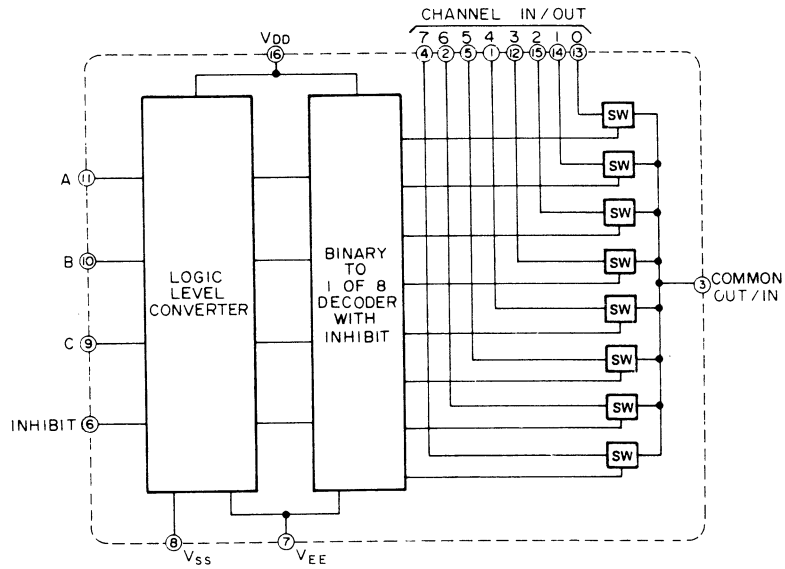
BA6138: IC901, 902, 903, 904



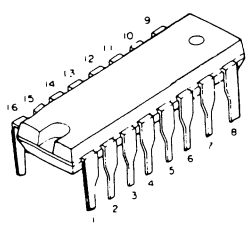


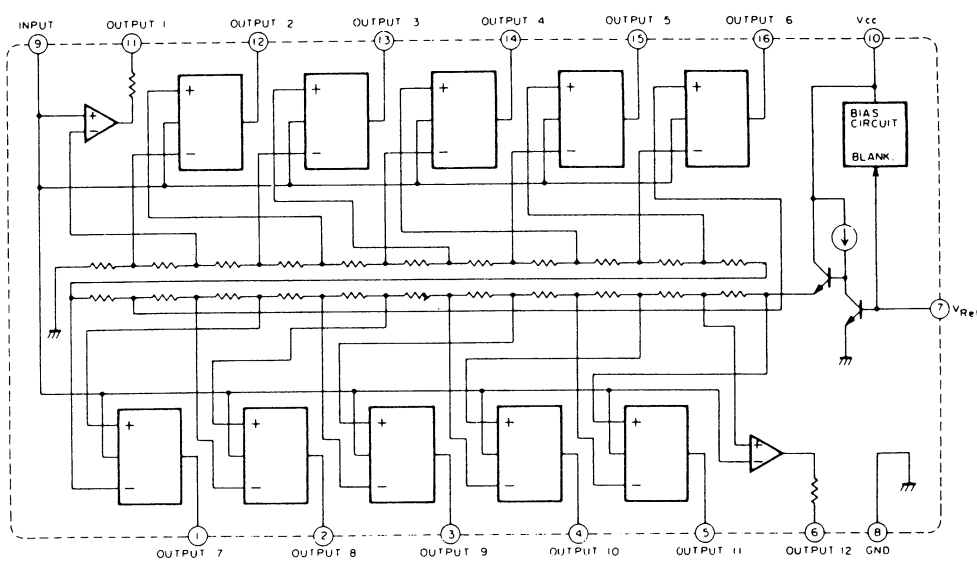
HD14051BFP
μPD4051BG: IC905



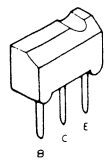


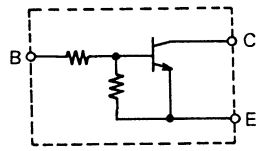
M51901: IC906



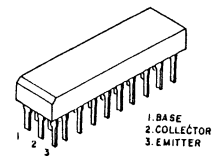


UN1214: Q301, 601, 602, 603
Q604, 605

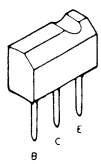




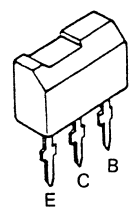
DTC114Y: Q606, 914
DTA114Y: Q607, 915



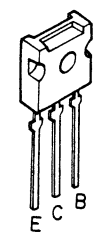
2SB822: Q801, 802
2SC2021M: Q807
2SC1545: Q901, 916



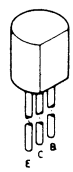
2SD1225M : Q805, 811



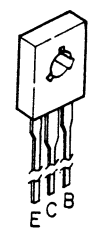
2SC3421: Q806



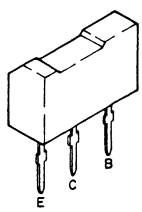
2SC1815: Q808

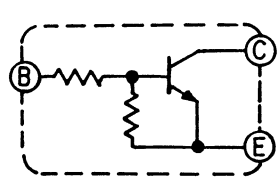


2SD974A : Q809, 810



DTC144WA: Q813, 814





DTA114Y: Q911